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Recommend: High
by G. Ferreira

PRELIMINARY ASSESSMENT

U.S. Bronze Powders

RARITAN TOWNSHIP, HUNTERDON COUNTY

EPA ID.: NJD002344190

New Jersey Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
Bureau of Site Assessment

U.S. BRONZE POWDERS
ROUTE 202 N
RARITAN TOWNSHIP, HUNTERDON COUNTY, NEW JERSEY
EPA ID NO. NJD002344190

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NARRATIVE

U.S. BRONZE POWDERS
ROUTE 202 N
RARITAN TOWNSHIP, HUNTERDON COUNTY, NEW JERSEY
EPA ID NO. NJD002344190

GENERAL INFORMATION AND SITE HISTORY

U.S. Bronze Powders is a 21.9-acre site located on Block 40, Lot 4 in Raritan Township, Hunterdon County. The site is bounded by Route 202 to the north, a field and commercial properties to the west and farm fields to the south. A New Jersey Power and Light right-of-way and beyond that a farmhouse and fields are to the east. The nearest home is approximately 400 feet to the east. Approximately 23,300 residents are within 4 miles of the site.

U.S. Bronze has been operating at this site since 1957. The company bought the property from Marie and Clarence Alles in 1955. Prior to U.S. Bronze the site was used as fields for grazing cattle.

SITE OPERATIONS OF CONCERN

Until 1980 U.S. Bronze made aluminum into powder and recovered copper from large plates. The recovery process involved copper-coated solid plates being placed through a series of twelve vats. The vats had a mixture of copper sulfate and sulfuric acid which drew off the copper. Electrical charges added to various vats also aided in removing the copper. A 3,000-gallon aboveground storage tank was used to hold waste copper sulfate solution until it was removed off site.

Currently U.S. Bronze manufactures copper and brass flake by atomization and ball milling.

Three 275-gallon aboveground storage tanks within a contained area are used to store waste oil. Three types of oil, synthetic, motor and hydraulic, are generated. Most of the oil is generated from various machinery and working equipment. Safety-Kleen waste cleaner, generated since 1986, is recycled. It is not known what was used prior to 1986. Both the waste oil and waste cleaner are manifested off site within 90 days.

Four underground mineral spirits storage tanks south of the main building were excavated in 1986. The size of the tanks were two 8,000-gallon, one 4,000-gallon and one 1,000-gallon. While in operation a vent from the tanks had solvent odors emanating from it. Soil samples collected in the area of the tanks indicated contamination with mineral spirits.

On September 24, 1981 a chemical explosion occurred at U.S. Bronze. The explosions were caused by aluminum powder, which was being blown from a hopper truck into the aluminum atomization chamber and from there blown down to storage hoppers and packaging equipment in an adjacent building. A large black cloud rose from the plant and dispersed with the wind. Following the explosion, small scattered piles of burning aluminum particles were observed. The explosion was the result of static electricity. No environmental hazards were believed to have occurred due to the explosion.

A member of the Cancer and Toxic Substances Survey Group reported that on

October 8, 1981 a hose was observed coming from the ball mill area of the facility and discharging what appeared to be wastewater across the parking lot and into a storm drain. The discharge contained bronze and copper flakes which were present in the ditch and Mill Creek where the storm drain flowed. An employee stated that the discharge occurred frequently and was the result of overfilling the ball mill recirculating tank. The plant engineer, however, stated that the discharge was infrequent. The company was directed to cease this method of discharging wastewater.

On May 31, 1983 the NJDEP, Division of Hazardous Waste Management (DHWM), Bureau of Central Enforcement (BCE) conducted an inspection at U.S. Bronze. Aluminum scrap was observed in 55-gallon drums around the property. This scrap was regularly sent to Kansas City Recycling which turned it into aluminum ingot. Also observed were twenty-three 55-gallon drums containing waste oil. The drums were not labeled and were of poor integrity. During the inspection, approximately 1,000 gallons of corrosive waste, 1,000 gallons of plating solutions and 2,200 gallons of waste oil were identified on site.

An investigation conducted on March 31, 1987 by the NJDEP, Division of Water Resources (DWR) revealed that the flooring beneath the electrolytic copper operation (known as Fernlock) had been eaten away to a depth of 1.5 feet by copper sulfate in the area of the sump pumps. This allowed the discharge to groundwater of copper sulfate solution. The area was noted by blue staining. The company agreed to conduct a cleanup of the area. (Attachment AA)

On June 2, 1989 the NJDEP, DHWM, Bureau of Northern Enforcement (BNE) noted a cleanup of the copper sulfate vat area was being conducted. Eight 55-gallon drums containing the laboratory solvent mixture from the development of the ink production process were not properly managed. The mixture was a trichloroethylene (TCE)/toluene/acetone/hexane mixture. The company agreed to comply with the requirements for storing hazardous wastes.

On September 20, 1991 the NJDEPE, Division of Responsible Party Site Remediation (DRPSR), Bureau of Site Assessment (BSA) conducted a Pre-Sampling Assessment (PSA) at the U.S. Bronze facility. The following information was obtained during the PSA:

The site is 22 acres; however, only the manufacturing area is fenced.

There is a foundry building with a furnace which melts the copper and copper alloys. The resulting product is then ground into powder. Twenty-three ball mills on site flatten the grains into flakes.

Wastes generated include vacuum dust which is removed from site and reused by another company. Laboratory wastes which are placed in 55-gallon drums and removed from site by Safety-Kleen, approximately one drum in 90 days. These wastes are F003 and F005 wastes. Ink producing process waste is stored in 55-gallon drums prior to removal from the site.

One 12,000-gallon underground fuel oil tank is present on site. The tank is located near the gate to the facility and is monitored.

A 550-gallon underground diesel tank is located near the well pumphouse.

Runoff from the site and currently the roof drains appears to flow downhill to an unnamed creek located on the east side and adjacent to the site. Pathways down the hill are evident and some areas are unvegetated.

Copper-colored water was present outside the east side of the building. This area has been sampled and remedial activities have been proposed. (See Soil section.)

Currently the company is developing a stormwater treatment system for the roof drains. The discharge will be to Mill Creek.

Numerous readings above background were observed on the Organic Vapor Analyzer (OVA) and HNu photoionization detector in the former mineral spirits tank area and the former gasoline tank area.

GROUNDWATER ROUTE

U.S. Bronze is underlain by 1 to 5 feet of surficial deposits consisting of red to brown silty clay with sand. Beneath these deposits is the Triassic age Brunswick Shale. The shale is a red argillaceous shale with local beds of fine-grained red sandstone, siltstone and black, gray or greenish shale. The Brunswick Shale is estimated to be 6,000 to 9,000 feet thick and is highly fractured. Groundwater is 50 to 100 feet deep. Groundwater flow direction is not known, however, the facility is on a hill which may cause groundwater to flow radially away from the site. Wells in the area of the site draw from this formation.

U.S. Bronze has two production wells, both 500 feet deep, on site. Trace levels of copper were detected in the wells in 1988. These wells are still used as the site's industrial and potable water supply.

Four monitoring wells were installed on site in July 1989. MW-1 is 115 feet deep and located 10 feet west of the northwest corner of the manufacturing building. In the center of the alcove on the south side of the machine shop is MW-2 which is 60 feet deep. MW-3, 65 feet deep, is 33 feet east and 7 feet south of the southwest corner of the manufacturing building. MW-4, which is 8 feet west and 17 feet south of the southeast corner of the manufacturing building, is 75 feet deep. On August 4, 1989 Recon Systems of Three Bridges, New Jersey collected samples from each of the monitoring wells. The samples were analyzed for petroleum hydrocarbons (PHCs), priority pollutant metals (PPMs), volatile organic compounds (VOCs) and base/neutral compounds (BNs). No concentrations above NJDEP action levels were detected in MW-1 and MW-4. No PPMs were detected in MW-2 and MW-3. MW-2 had elevated levels of PHCs (43.8 parts per million [ppm]), VOCs (1.83 ppm) and BNs (0.647 ppm). Elevated levels of VOCs (0.019 ppm) and BNs (0.083 ppm) were detected in MW-3.

The monitoring wells were sampled a second time by Recon Systems on December 13, 1989. Samples were analyzed for PHCs, VOCs and BNs. No contaminants were detected in MW-1 and MW-4. MW-2 only had 1,1-dichloroethane at 0.019 ppm detected. In MW-3, 1,1-dichloroethane (0.20 ppm), 1,1-dichloroethylene (0.27 ppm), ethylbenzene (0.057 ppm), 1,1,1-trichloroethane (0.19 ppm), m-xylene (0.11 ppm), p,o-xylene (0.053 ppm), bis

(2-ethylhexyl) phthalate (0.014 ppm) and naphthalene (0.11 ppm) were detected. It was proposed that a recovery pump be installed in MW-3 to recover groundwater. The recovery pump has not yet been installed.

The Flemington Water Department has four wells within 4 miles of the site. Two wells are 0.8 mile from the site, one well is 1.2 miles and the fourth well is 1.9 miles from the site. The wells are 350 to 510 feet deep in the Brunswick Formation. Approximately 4,240 people are served by these wells in Flemington Borough and Raritan Township.

Residents in Raritan Township, Readington Township, Delaware Township, East Amwell Township and Hillsborough Township within 4 miles of the site are served by private wells. Approximately 19,100 people have private wells within 4 miles. The Hunterdon Medical Center has four wells 2 miles from the site which serve approximately 600 people.

SURFACE WATER ROUTE

U.S. Bronze maintains NJPDES Permit No. 003336 to discharge oil/water separator effluent and stormwater runoff to Mill Creek. Until June 1991 water softener regeneration wastes and noncontact cooling water blowdown were also permitted to be discharged to Mill Creek. Currently they are being discharged to the Raritan Township Municipal Utilities Authority (RTMUA).

Mill Creek flows north 1 mile into Bushkill Brook. An unnamed stream adjacent to the site also flows approximately 1 mile to Bushkill Brook. Bushkill Brook flows 0.4 mile into the Red Rock Lake section of the South Branch Raritan River. The South Branch Raritan River meets with the North Branch Raritan River to form the Raritan River approximately 12.9 miles downstream from the site. There are no drinking water intakes within 15 stream miles of the site. Mill Creek and Bushkill Brook may be used for fishing purposes. The South Branch Raritan River and Raritan River are used for fishing, boating and swimming purposes.

During a Compliance Monitoring Inspection conducted by the NJDEP, Division of Water Resources (DWR) on May 21, 1981, U.S. Bronze received an "unacceptable" rating. The rating was due to the oil/water separator and metal recovery unit being considered an industrial wastewater treatment facility. The oil/water separator separates particles of metal powders from the cooling water discharge. Also noted during the inspection were many containers, barrels and drums of various types stored in the rear and loading dock area of the facility.

An "unacceptable" rating was given to U.S. Bronze following a November 10, 1987 Compliance Evaluation Inspection (CEI) conducted by the NJDEP, DWR, BNE. The oil/water separator was providing inadequate treatment and the final effluent was blue-gray and turbid. U.S. Bronze had exceeded their permit discharge limits for petroleum hydrocarbons (15 ppm) at 37 ppm and copper (1 ppm) at 2.2 ppm. During the inspection it was observed that the operation of the copper sulfate processing area had ceased and the cemented troughs were empty and deteriorated. The deterioration caused the discharge of copper sulfate to groundwater. The company was directed to correct the violations. (Attachment O)

Stream and sediment samples were collected upstream and downstream in the unnamed stream adjacent to the site on March 28, 1988 by Recon Systems of

Three Bridges, New Jersey. The samples were analyzed for copper and sulfate. Copper was not detected in the water samples. In the upstream sediment copper was detected at 26.1 ppm and in the downstream sediment at 95.4 ppm. There was not a significant difference in sulfate concentrations between the upstream and downstream samples.

On May 4, 1989 wastewater samples were collected from the U.S. Bronze wastewater treatment plant by the NJDEP, DWR, BNE. The samples were analyzed for PHCs, chromium, copper and zinc. Copper was detected at 148 ppb and zinc at 119 ppb.

The NJDEP, DWR, BNE conducted a CEI of U.S. Bronze on May 30, 1989 and issued them an "unacceptable" rating. During the inspection material from a hazardous waste spill containment tank was observed being pumped and discharged to an adjacent unpaved area. The company was directed to cease the discharge until an appropriate NJPDES permit was obtained. U.S. Bronze was also cited for exceeding their permit limits for copper (1,000 ppm) and zinc (1,000 ppm) on two occasions. In late 1988 copper was found at 4,200 ppm and zinc at 4,000 ppm; and in early 1989 copper was detected at 1,600 ppm and zinc at 2,300 ppm. U.S. Bronze was directed to institute measures to correct the violations.

On May 11, 1990 Recon Systems of Three Bridges, New Jersey collected an upstream and downstream surface water sample in the unnamed stream. The samples which were analyzed for copper and sulfate did not indicate a significant difference between the two samples.

The NJDEP, DWR, BNE collected an industrial effluent sample from U.S. Bronze on June 20, 1990. The sample was analyzed for PHCs, chromium, copper and zinc. Copper was detected at 201 ppb and zinc at 156 ppb.

Following a CEI conducted on March 27, 1991 by the NJDEP, DWR, BNE, U.S. Bronze received an "unacceptable" rating for exceeding their permit limits for copper and zinc from February 1, 1990 to January 31, 1991. The permit limit for copper was 14 ppb and zinc was 97 ppb. Reported results are summarized below:

Monitoring Period	Copper (ppb)	Zinc (ppb)
May 1990	450	270
June 1990	220	170
July 1990	120	No data
August 1990	180	110
September 1990	430	160
October 1990	310	140
November 1990	420	190
December 1990	240	340
January 1991	170	110
February 1991	180	110

U.S. Bronze was directed to correct their violations.

The NJDEP, DWR, BNE collected a grab sample on April 23, 1991 from U.S. Bronze. The samples were analyzed for PHCs, chromium, copper and zinc. Copper at 247 ppb and zinc at 135 ppb were detected.

There are no wetlands along Mill Creek or Bushkill Brook. Several wetland types are present along the South Branch Raritan River. The most predominant types are riverine lower perennial open water, palustrine open water, palustrine forested broad-leaved deciduous and palustrine emergent.

State threatened species in the area of the site or along the surface water pathway include the longtail salamander, the American bittern, the upland sandpiper, the bobolink, the grasshopper sparrow, the vesper sparrow and the cliff swallow.

AIR ROUTE

U.S. Bronze holds 33 Air Pollution Certificates through the NJDEPE, Division of Environmental Quality under Plant ID #80030. The certificates are primarily for the ball mill area. Other equipment and operations permitted include furnaces, bronze atomization, ribbon blenders, burning operation, boiler, washer tank and stacks.

A potential for air contamination exists due to operations conducted and materials handled on site.

SOIL

U.S. Bronze is located on the Penn shaly silt loam (PeC2) with 6 to 12 percent slopes. The Penn series consists of moderately deep, gently sloping to moderately steep, well-drained, loamy soil. PeC2 soil is shallower to shale bedrock than other members of the series.

In January 1988 Recon Systems of Three Bridges, New Jersey collected 14 soil samples at U.S. Bronze. The samples were analyzed for pH, copper and sulfate. I-1, I-2 and B-1 were collected from the deteriorated concrete floor area. B-2, B-4, B-5 and B-6 were collected in an area of blue staining. B-3 was located near a hole in the east wall of the electrolysis room. Results of this sampling episode are discussed below:

Boring No.	Depth (inches)	pH	Copper (ppm)	Sulfate (ppm)
I-2	6-12	7.41	148	66
I-1	6-12	2.99	2,070	9,460
I-1	12-18	2.38	2,200	11,780
B-1A	6-12	7.09	97.1	81.1
B-1B	40-48	4.84	644	72.6
B-2A	6-12	4.98	3,010	834
B-2B	40-48	6.24	129	143
B-3A	6-12	6.70	28.8	9.5
B-3B	36-42	7.23	18	12.1
B-4A	6-12	4.26	1,240	197
B-4B	36-42	6.17	973	273
B-5A	6-12	4.42	1,590	87.3
B-5B	24-30	4.29	1,450	ND
B-5A	6-12	5.63	493	46.2

ND = not detected

Recon Systems collected three soil samples in February 1988 at a depth of 0 to 6 inches. S-1 was collected along the same trend as B-2, B-4, B-5 and B-6 above. S-2 and S-3 were collected near the large dust collectors. The

samples were analyzed for pH, copper and sulfate. Sulfate was only detected in S-1 at 10 ppm. Copper concentrations were 1,190 ppm in S-1; 75,900 ppm in S-2; and 18,800 ppm in S-3. Levels of pH ranged from 5.14 to 6.86.

A lime slurry injection trench system was constructed on site to reduce the mobility of copper. On July 11 and 12, 1989 Recon Systems dug a trench 5 feet wide, 60 feet long and 4 feet deep beneath the floor of the Fernlock Building. The bottom of the trench was lined with two layers of plastic then a 4-inch perforated PVC pipe was laid in the trench. Stand pipes were placed at each end of the trench to act as fill and vent lines. The trench was filled with 1 foot of crushed stone with a layer of plastic sheeting and geofabric covering it. Excavated soil was then graded over the trench leaving only the two stand pipes visible. Approximately 1,000 pounds of lime was added to this area. Outside the Fernlock Building a 2.5- to 3-foot trench was constructed in an oval around the perimeter of the area. Approximately 800 pounds of lime was added to this area before it was regraded. Downslope of the Fernlock Building three trenches 2 feet wide by 50 feet long were constructed. Depths of the trenches varied from 2.5 feet near the top of the hill to 1 foot near the collection trench. A total of 600 pounds of lime were slurried then pumped to the trenches. Below the last injection trench a crescent-shaped collection trench was constructed to contain any overfilling of the trenches. The trench was filled with stone.

Based on a soil gas survey, soil sampling was conducted on March 28, 1990 by Recon Systems. The samples, which were analyzed for mineral spirits, were collected from eight locations in the area of the former underground storage tanks at various depths. Sampling results are discussed below:

Sample No.	Depth (feet)	Concentration (ppm)
S1/1	3-3.5	ND
S1/2	5.5-6	ND
S2/1	3-3.5	ND
S2/2	6-6.5	0.8
S3/1	3-3.5	5.7
S4/1	3-3.5	56.0
S4/2	4.5-5	29.0
S4/3	8.5-9	210.0
S5/1	3-3.5	11.0
S6/1	0.5-1	ND
S7/1	3-3.5	60.0
S7/2	5.9-6.4	ND
S8/1	3-3.5	ND
S8/2	4-4.5	ND

ND = not detected

Recon Systems recommended a cleanup level of 250 ppm due to the fact that the tanks had been removed and mineral spirits are closely related to petroleum hydrocarbons.

On September 5 and November 13, 1990 Dan Raviv Associates of Millburn, New Jersey collected 65 soil and 3 sediment samples throughout the site. The samples were analyzed for copper. The results are presented in Table I.

Concentrations ranged from 12 to 14,000 ppm. High concentrations were located near the adjacent farmhouse, as far as 450 feet northeast of the collection and injection trenches. It is believed that these concentrations are due to the prevailing wind at the site.

DIRECT CONTACT

No incidents of direct contact with hazardous substances on site have been reported. A potential for direct contact exists as hazardous materials are used on site. Also, residents at the nearby farmhouse may contact copper-contaminated soil which was discovered on their property.

FIRE AND EXPLOSION

As previously discussed, a chemical explosion occurred at U.S. Bronze in September 1981. No environmental hazards were known to have occurred as a result of the explosion.

No additional incidents have been reported. There is a potential for fire or explosion due to operations conducted on site.

ADDITIONAL CONSIDERATIONS

Several areas lacking vegetation were noted on site and on the down slope from the facility during the PSA conducted on September 20, 1991 by the NJDEPE, DRPSR, BSA. A potential for damage to fauna and contamination of the food chain are present due to contaminants detected on site.

Copper was detected on the property and farm fields adjacent to U.S. Bronze in November 1990.

ENFORCEMENT ACTIONS

A Notice of Violation (NOV) was issued to U.S. Bronze by the NJDEP, DWR, BNE on March 31, 1987. U.S. Bronze was cited for an unpermitted discharge to groundwater from the drainage system in the electrolytic process area (Fernlock); discharging metal flake from the floor drains in the ball mill area to discharge 001; and for not monitoring the flow from discharge 001. The company was required to immediately correct the violations.

On November 3, 1989 the NJDEP, DWR, BNE issued an Administrative Order and Notice of Civil Administrative Penalty Assessment (AO/NCAPA) to U.S. Bronze. The BNE found that from August 1987 through April 1989 U.S. Bronze violated the discharge limits of their NJPDES/Discharge to Surface Water permit. Parameters exceeded were copper, zinc, pH, petroleum hydrocarbons and chemical oxygen demand (COD). U.S. Bronze was ordered to conform to their permit and assessed a penalty of $255,000. Following the issuance of the AO/NCAPA, U.S. Bronze requested an administrative hearing.

A second AO/NCAPA was issued to U.S. Bronze on May 7, 1990 by the NJDEP, DWR, BNE. The findings were the same as the previous AO/NCAPA; the penalty assessment for this order was $194,500. U.S. Bronze again requested an administrative hearing. Currently the site is in litigation and awaiting the hearing.

PRIORITY DESIGNATION

U.S. Bronze is designated a high environmental concern. Copper and mineral spirits have been detected in on-site soils. Low levels of volatile organic compounds have been detected in the on-site monitoring wells. Also, copper was detected in soils near the adjacent farmhouse. There is a potential for nearby private wells to become contaminated.

RECOMMENDATIONS

A site inspection is recommended for this site. Soil sampling should be conducted in the area of the former mineral spirits and gasoline underground storage tanks. Due to the unknown direction of groundwater flow, the potable well at the adjacent farmhouse should also be sampled.

Submitted by:

Donna J. van Veldhuisen
HSMS II
Bureau of Site Assessment
September 30, 1991

Table I
Summary of Copper Concentrations In Soil and
Sediment Sampled September 5 and November 13, 1990
U.S. Bronze
Flemington, New Jersey

DRAI Sample No.	Sample Depths	Copper Concentrations
AA13	0-0.5	590
A2	0-0.5	1400
A5	0-0.5	3800
A6	0-0.5	14000
A14	0-0.5	260
	1.5-2.0	23
B1	0-0.5	550
	0.5-1.0	520
B2	0-0.5	2200
B4(A)	0-0.5	780
	0.5-1.0	1200
B4(B)	0-0.5	800
	0.5-1.0	750
B7	0-0.5	470
	1.5-2.0	210
B8	0-0.5	450
B13	0-0.5	390
B15	0-0.5	230
B16	0-0.5	210
C3	0-0.5	780
C5	0-0.5	410
C14	0-0.5	130
D2(A)	0-0.5	370
	1.5-2.0	20

Notes: (1) Sample depths represent feet below grade.
(2) Copper concentrations are in parts per million.

Dan Raviv Associates, Inc.
DRAI Job No. 90C773

Table I (cont'd)
Summary of Copper Concentrations In Soil and
Sediment Sampled September 5 and November 13, 1990
U.S. Bronze
Flemington, New Jersey

DRAI Sample No.	Sample Depths	Copper Concentrations
D2(B)	0-0.5	450
	1.5-2.0	29
D3	0-0.5	300
D4	0-0.5	62
D7	0-0.5	100
D13	0-0.5	270
D15	0-0.5	17
E1	0-0.5	220
E2	0-0.5	340
E5	0-0.5	690
	0.5-1.0	34
E14(A)	0-0.5	360
E14(B)	0-0.5	170
F2	0-0.5	790
F3	0-0.5	700
	1.5-2.0	25
F4	0-0.5	1400
F6	0-0.5	350
F7(A)	0-0.5	250
F7(B)	0-0.5	38
F13	0-0.5	250
	1.5-2.0	12
G1	0-0.5	420

Notes: (1) Sample depths represent feet below grade.
(2) Copper concentrations are in parts per million.

Dan Raviv Associates, Inc.
DRAI Job No. 90C773

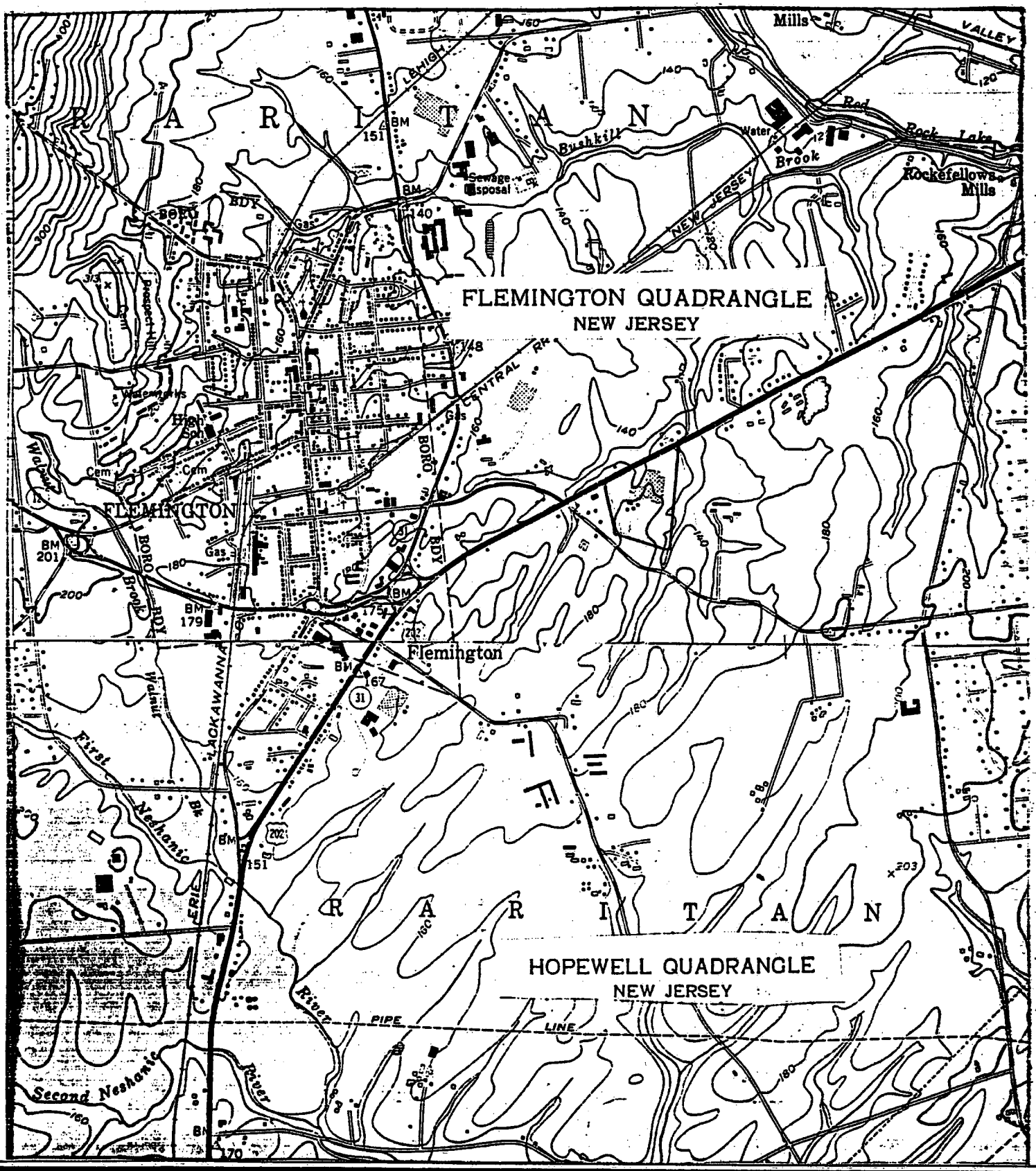
Table I (cont'd)
Summary of Copper Concentrations In Soil and
Sediment Sampled September 5 and November 13, 1990
U.S. Bronze
Flemington, New Jersey

DRAI Sample No.	Sample Depths	Copper Concentrations
G4	0-0.5	2000
G13	0-0.5	34
H1	0-0.5	470
H3	0-0.5	470
H4(A)	0-0.5	810
H4(B)	0-0.5	700
H7	0-0.5	360
I2	0-0.5	820
	1.5-2.0	21
I5	0-0.5	270
I6	0-0.5	270
I7	0-0.5	360
	1.5-2.0	15
I13	0-0.5	42
I15	0-0.5	27
J4(A)	0-0.5	180
J4(B)	0-0.5	310
K2	0-0.5	720
S1	0-0.5	21
S2	0-0.5	21
S3	0-0.5	43

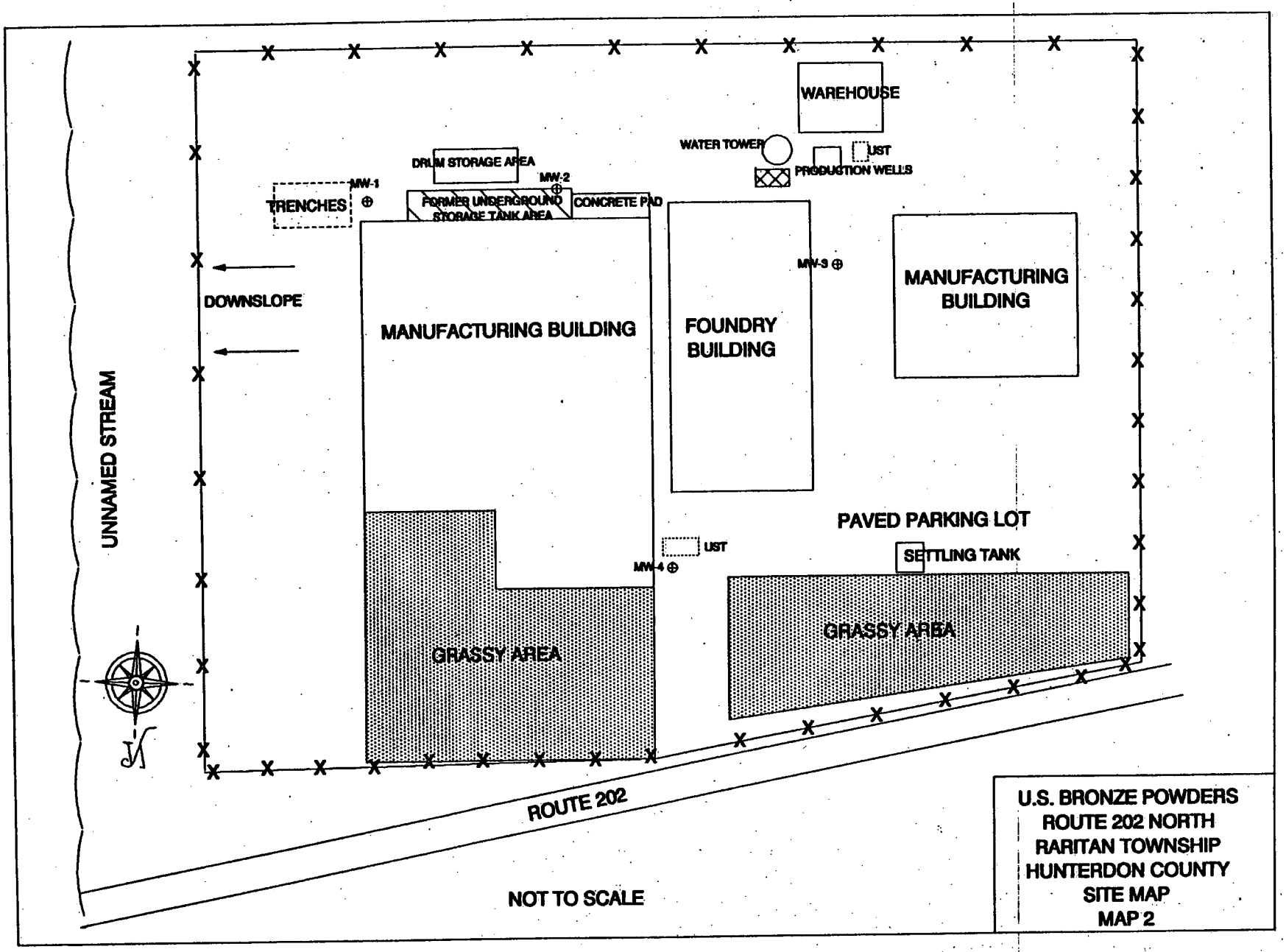
Notes: (1) Sample depths represent feet below grade.
(2)Copper concentrations are in parts per million.

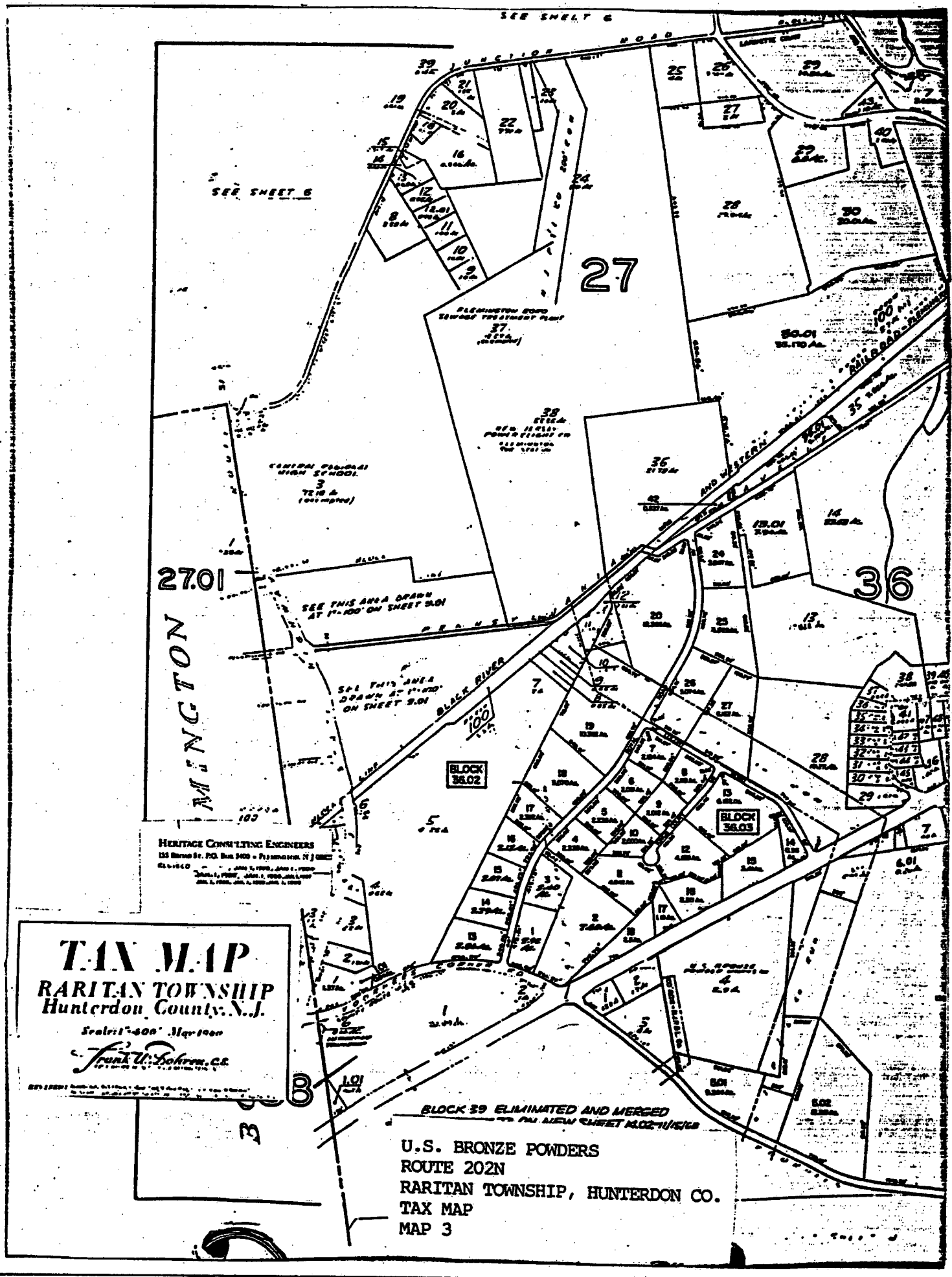
Dan Raviv Associates, Inc.
DRAI Job No. 90C773

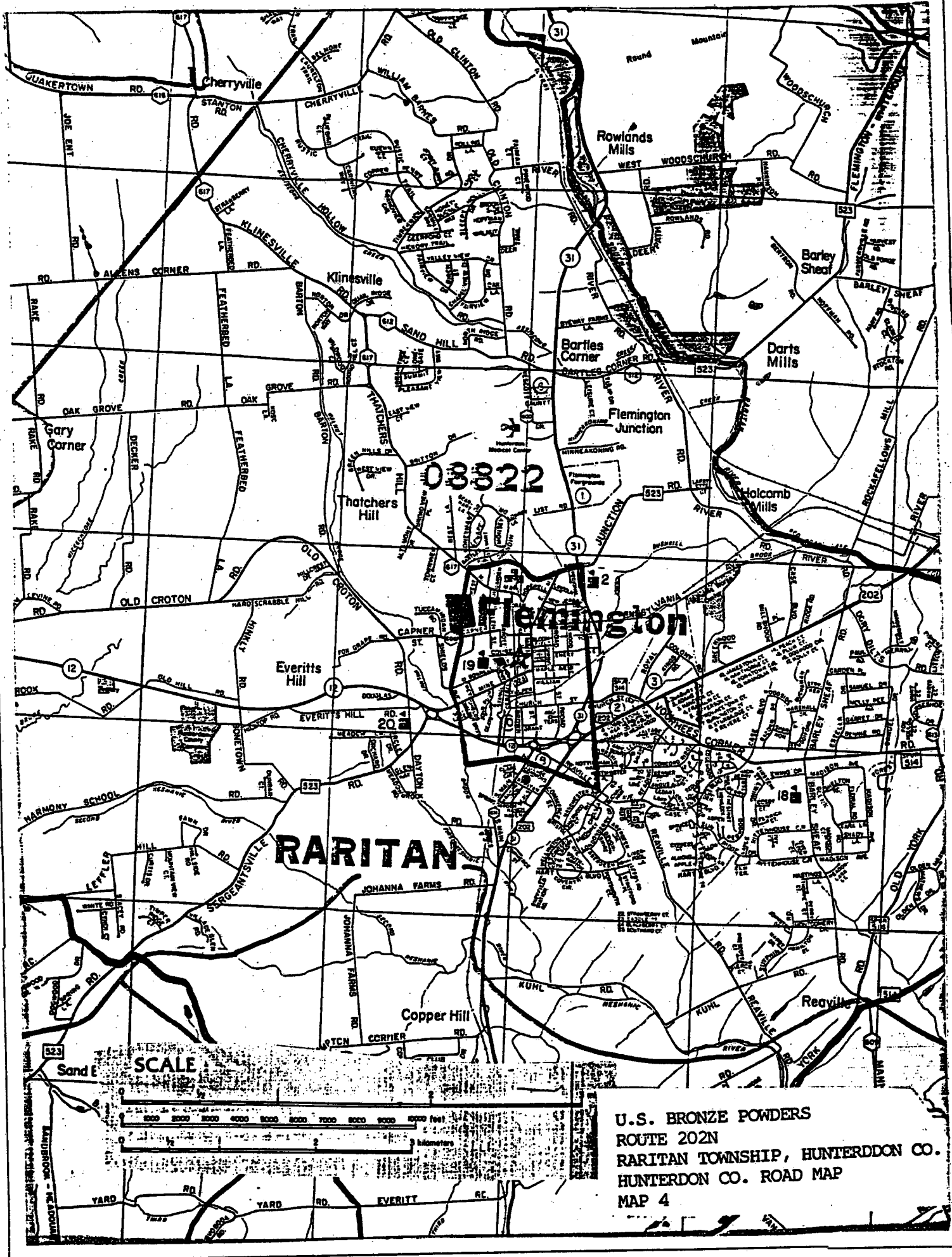
MAPS



U.S. BRONZE POWDERS
ROUTE 202N
RATITAN TOWNSHIP, HUNTERDON
LATITUDE: 40° 30' 54"
LONGITUDE: 74° 54' 33"
FLEMINGTON AND HOPEWELL QUAD
MAP


WAREHOUSE
WATER TOWER
UST
PRODUCTION WELLS
DRUM STORAGE AREA
MW-2
MW-1
TRENCHES
FORMER UNDERGROUND STORAGE TANK AREA
CONCRETE PAD
MW-3
MANUFACTURING BUILDING
FOUNDRY BUILDING
MANUFACTURING BUILDING
DOWNSLOPE
UNNAMED STREAM
PAVED PARKING LOT
UST
SETTLING TANK
MW-4
GRASSY AREA
GRASSY AREA
N
ROUTE 202
NOT TO SCALE
U.S. BRONZE POWDERS
ROUTE 202 NORTH
RARITAN TOWNSHIP
HUNTERDON COUNTY
SITE MAP
MAP 2


SEE SHEET 6
SEE SHEET 6
27
27.01
36
BLOCK 36.02
BLOCK 36.03
BLACK RIVER
RAILROAD
TAX MAP
RARITAN TOWNSHIP
Hunterdon County, N.J.
Frank U. Bohren, C.E.
HERITAGE CONSULTING ENGINEERS
BLOCK 39 ELIMINATED AND MERGED
U.S. BRONZE POWDERS
ROUTE 202N
RARITAN TOWNSHIP, HUNTERDON CO.
TAX MAP
MAP 3


Cherryville
Rowlands Mills
Barley Sheaf
Klinesville
Bartles Corner
Darts Mills
Flemington Junction
Gary Corner
08822
Thatchers Hill
Holcomb Mills
Flemington
Everitts Hill
RARITAN
Copper Hill
Reaville
SCALE
U.S. BRONZE POWDERS
ROUTE 202N
RARITAN TOWNSHIP, HUNTERDDON CO.
HUNTERDON CO. ROAD MAP
MAP 4

Scale: 1 Mile to an Inch.

Miles 1 0 1 2 3

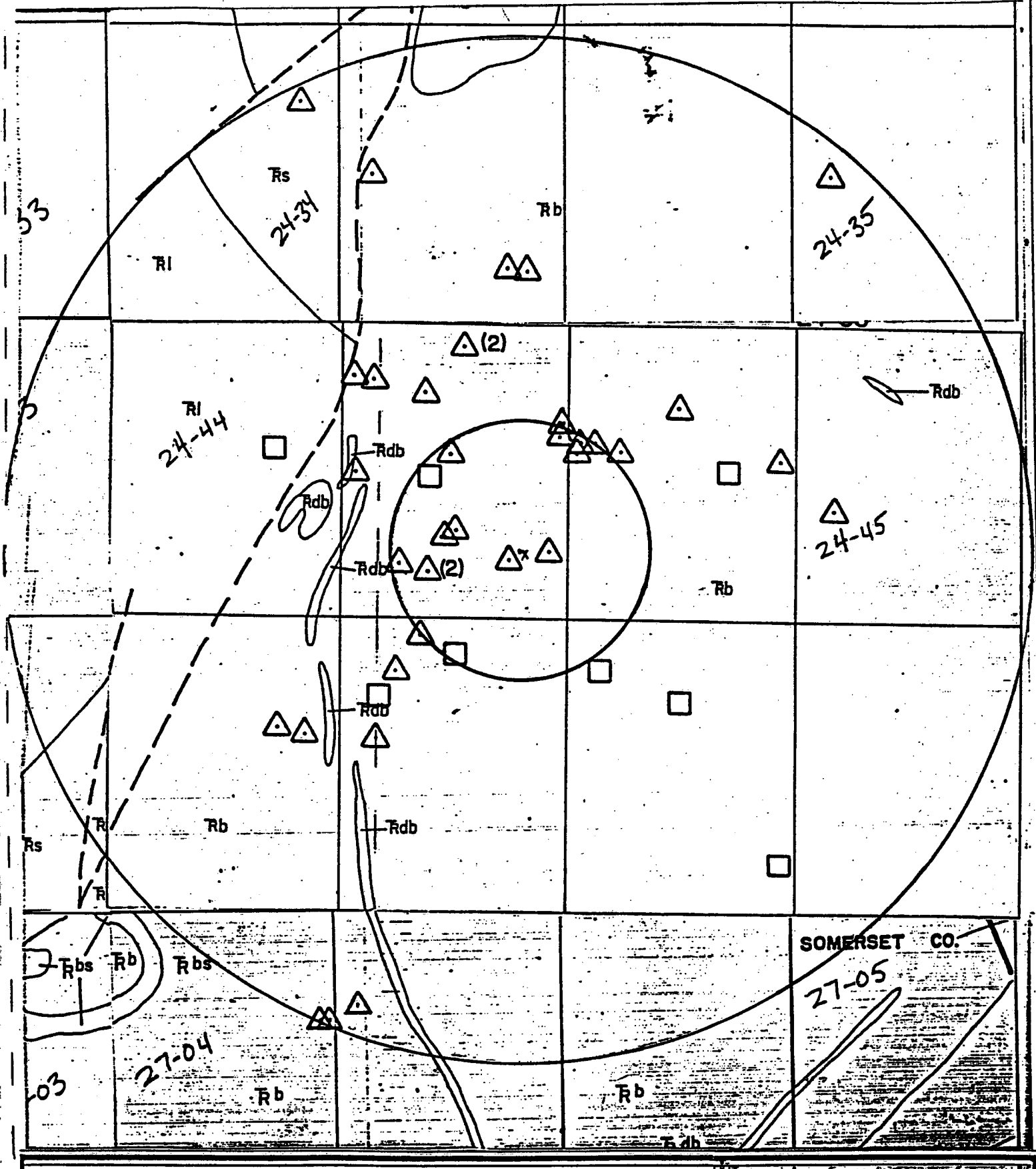
Yards 1000 500 0 1000 2000 3000

Meters 1000 2000 3000

A. HOEN & CO. BALTIMORE, MD.

Contour interval: 20 feet

U.S. BRONZE POWDERS
ROUTE 202N
RARITAN TOWNSHIP, HUNTERDON
NEW JERSEY ATLAS
BASE MAP SHEETS 24 and 27
MAP 5



Scale: 1 Mile to an Inch.

Miles 0 1 2 3

Yards 1000 0 1000 2000 3000

Meters 1000 0 1000 2000 3000

Contour interval: 20 feet

U.S. BRONZE POWDERS
ROUTE 202N
RARITAN TOWNSHIP, HUNTERDON CO.
NEW JERSEY ATLAS
GEOLOGIC OVERLAY SHEETS 24 and 2
MAP 6

LEGEND FOR ATLAS SHEET 24

△ — INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE (INCLUDING PRIVATE WELLS)

□ — PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ — UNSUCCESSFUL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ — UNSUCCESSFUL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊡ — NO TEST — NO DATA ON YIELD

——— FAULT (DASHED WHERE INFERRED)

——— CONTACT (DASHED WHERE INFERRED)

——— PHYSIOGRAPHIC PROVINCE BOUNDARY

QUATERNARY

Qa – RECENT ALLUVIUM

Qod – OLDER DRIFT (PRE WISCONSIN)

TRIASSIC

Rb – BRUNSWICK FORMATION (UNDIFFERENTIATED)

Rba – RED SHALE INTERBEDDED WITH SANDSTONE, SILTSTONE, AND ARGILLITE

Rl – LOCKATONG FORMATION

Rs – STOCKTON FORMATION

Rc – CONGLOMERATE

Rdb – DIABASE

ORDOVICIAN

Omb – MARTINSBURG FORMATION (UNDIFFERENTIATED)

- Om3 ARGILLACEOUS SHALE WITH A FOSSILIFEROUS ZONE
- Om2 ARGILLACEOUS SHALE AND GRAYWACKE
- Om1 BLACK FISSILE SHALE
- Oju JUTLAND MEMBER- VARI-COLORED SHALES & SILTSTONES
- Ojul JUTLAND MEMBER-LIMESTONE
- Ojus JUTLAND MEMBER-SANDSTONE, SHALE, CONGLOMERATE

Ojb – JACKSONBURG FORMATION (UNDIFFERENTIATED)

- Ojr CEMENT ROCK
- Ojl CEMENT LIMESTONE

LEGEND FOR ATLAS SHEET 24 (con't)

Oe - EPLER FORMATION
Or - RICKENBACH FORMATION

CAMBRIAN

€a - ALLENTOWN FORMATION
€l - LEITHSVILLE FORMATION
€h - HARDYSTON FORMATION

CAMBRO-ORDOVICIAN
€Ok KITTATINNY (UNDIFFERENTIATED)

PRE CAMBRIAN

P€ - (UNDIFFERENTIATED)
am - AMPHIBOLITE
gnb - BIOTITE GNEISS
gnk - POTASSIC FELDSPAR GNEISS
mr - DOLOMITE & CALCITE MARBLE
msv - METASEDIMENTARY & METAVOLCANIC (UNDIFFERENTIATED)
ga - ALASKITE
gma - MICRO PERTHITE ALASKITE
mig - AMPHIBOLITE - MIGMATITE
gno - OLIGOCLASE - QUARTZ GNEISS

LEGEND FOR ATLAS SHEET 27

△ —— INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE

□ —— PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ —— UNSUCCESSFULL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ —— UNSUCCESSFULL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

[1] —— NO TEST – NO DATA ON YIELD

——— FAULT (DASHED WHERE INFERRED)

——— CONTACT (DASHED WHERE INFERRED)

PIEDMONT / COASTAL PLAIN PHYSIOGRAPHIC PROVINCE BOUNDARY

SEDIMENTARY ROCKS

TERTIARY

Tkw	KIRKWOOD SAND
Tht	HORNERSTOWN MARL

CRETACEOUS

Kns	NAVESINK MARL
Kml	MOUNT LAUREL SAND
Kw	WENONAH SAND
Kmt	MARSHALLTOWN FORMATION
Ket	ENGLISHTOWN SAND
Kwb	WOODBURY CLAY
Kmv	MERCHANTVILLE CLAY
Km	MAGOTHY FORMATION
Kr	RARITAN FORMATION

TRIASSIC

Rb	BRUNSWICK FORMATION
Rba	BEDS SIMILAR TO LOCKATONG FORMATION
Rl	LOCATONG FORMATION
Rs	STOCKTON FORMATION

CAMBRIAN

€h	HARDYSTON QUARTZITE

IGNEOUS ROCKS

TRIASSIC

Rdb	DIABASE
Rbs	BASALT

PRECAMBRIAN

gb	GABBRO
bgn	BYRAM GNEISS

METAMORPHIC ROCKS

UNKNOWN ORIGIN

Wgn	WISSAHICKON SCHIST

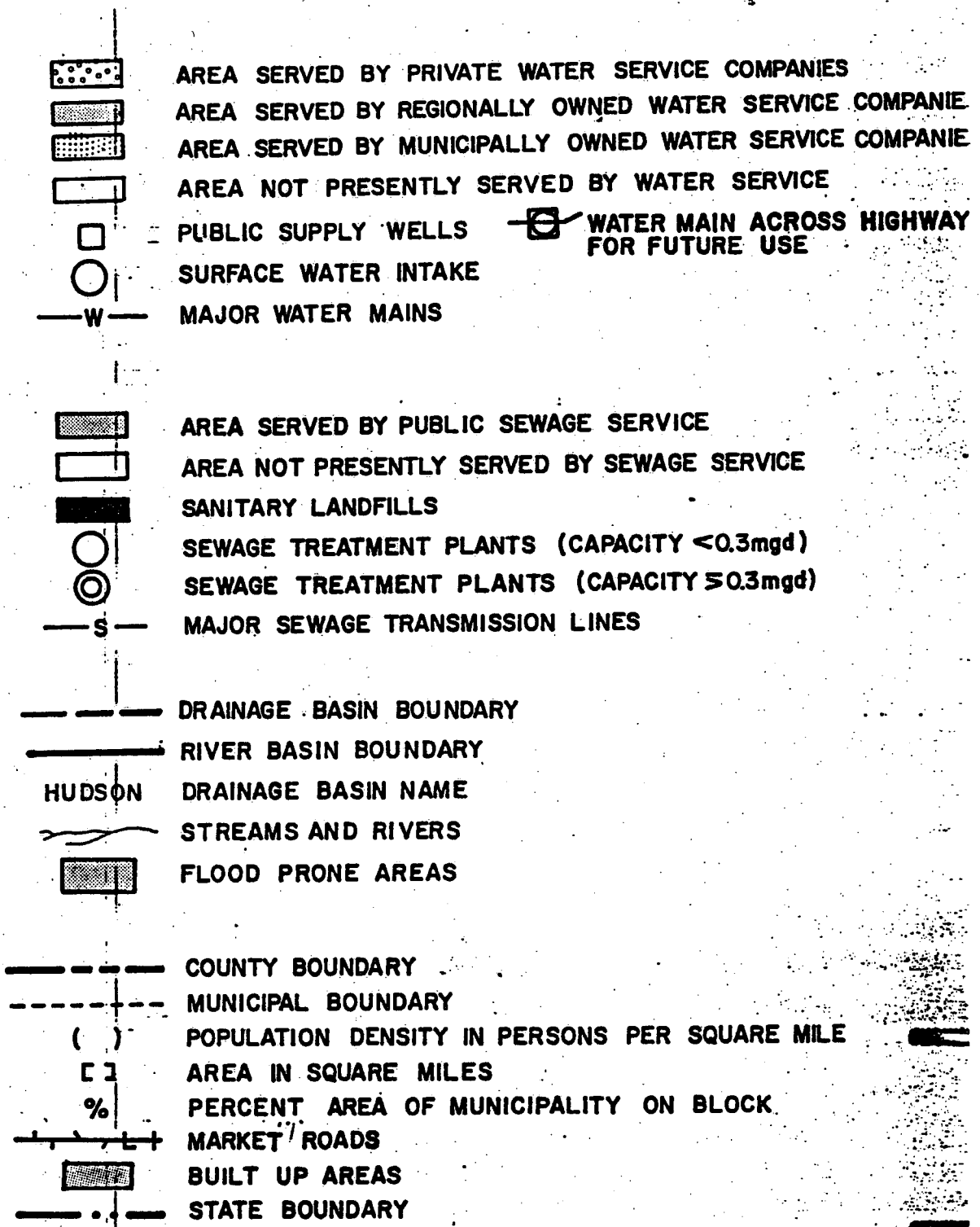
LEGEND FOR ATLAS SHEET 27

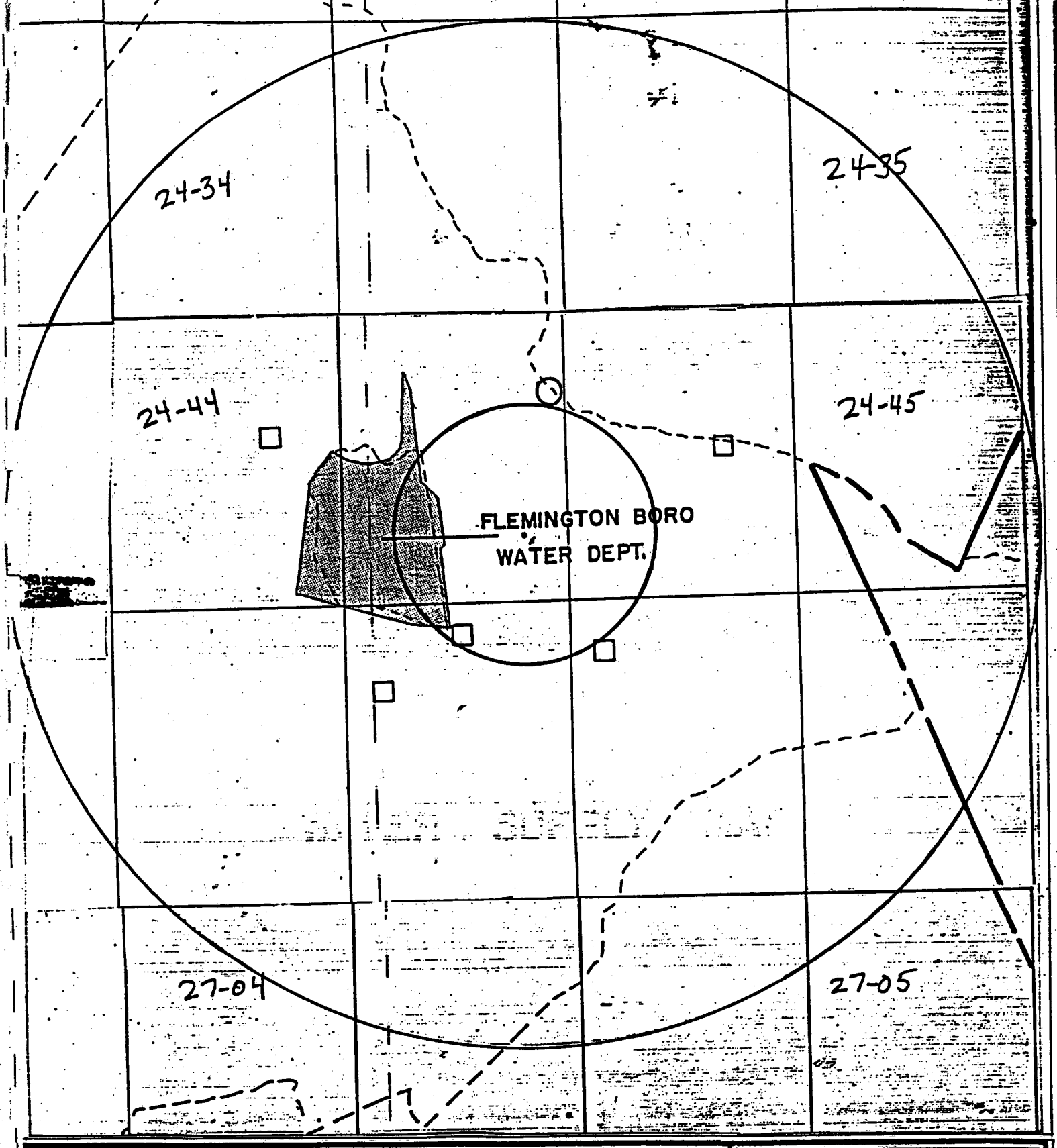
——— — — ———	COUNTY OR STATE BOUNDARY
————————	MUNICIPAL BOUNDARY
( )	POPULATION DENSITY IN PERSONS PER SQUARE MILE
[ ]	AREA IN SQUARE MILES
%	PERCENT AREA OF MUNICIPALITY ON BLOCK
——— — — ———	DRAINAGE BASIN BOUNDARY
———————	RIVER BASIN BOUNDARY
HUDSON	DRAINAGE BASIN NAME
	AREA SERVED BY PUBLIC WATER AND SEWAGE SEWAGE
	AREA SERVED BY PUBLIC WATER SUPPLIES ONLY
	AREA SERVED BY SEWAGE SERVICE ONLY
	EXISTING PONDS, LAKES, AND RESERVOIRS
	SANITARY LANDFILLS
	SEWAGE TREATMENT PLANTS
——S——	MAJOR SEWAGE TRANSMISSION LINES
——W——	MAJOR WATER PIPELINES

ALL MAP COORDINATES ARE FOR THE LOWER LEFT HAND CORNER

SCALE 1 INCH = 1 MILE

LEGEND


WATER SUPPLY
AREA SERVED BY PRIVATE WATER SERVICE COMPANIES
AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIE
AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIE
AREA NOT PRESENTLY SERVED BY WATER SERVICE
PUBLIC SUPPLY WELLS
WATER MAIN ACROSS HIGHWAY FOR FUTURE USE
SURFACE WATER INTAKE
W
MAJOR WATER MAINS
SEWAGE, LANDFILL
AREA SERVED BY PUBLIC SEWAGE SERVICE
AREA NOT PRESENTLY SERVED BY SEWAGE SERVICE
SANITARY LANDFILLS
SEWAGE TREATMENT PLANTS (CAPACITY <0.3mgd)
SEWAGE TREATMENT PLANTS (CAPACITY ≥0.3mgd)
S
MAJOR SEWAGE TRANSMISSION LINES
DRAINAGE BASIN
DRAINAGE BASIN BOUNDARY
RIVER BASIN BOUNDARY
HUDSON
DRAINAGE BASIN NAME
STREAMS AND RIVERS
FLOOD PRONE AREAS
POPULATION
COUNTY BOUNDARY
MUNICIPAL BOUNDARY
( )
POPULATION DENSITY IN PERSONS PER SQUARE MILE
[ ]
AREA IN SQUARE MILES
%
PERCENT AREA OF MUNICIPALITY ON BLOCK
MARKET ROADS
BUILT UP AREAS
STATE BOUNDARY



Scale: 1 Mile to an Inch.

Miles 1 ¾ ½ ¼ 0 1 2 3

Yards 1000 500 0 1000 2000 3000

Meters 1000 500 0 1000 2000 3000

Contour Interval: 20 feet

U.S. BRONZE POWDERS
ROUTE 202N
RARITAN TOWNSHIP, HUNTERDON CO.
NEW JERSEY ATLAS
WATER SUPPLY OVERLAY SHEETS 24 and 27
MAP 7

A. High Bridge, Pittstown

B. Delaware River-Lockatong Creek, Raritan-South Branch

C. 2.	Map No.	Location	Period of Record
	79	Spruce Run at Clinton	1959-
	80	South Branch Raritan River at Clinton	1936, 1955
	81	3969.0	8/18/45
3.	79	Spruce Run at Clinton	1967-
	316	Capalong Creek at Pittstown, Rt.579	1966-

Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Triassic Conglomerates (Trc), Lockatong Formation (Trs), diabase (Trdb), Martinsburg Formation (Omb), Martinsburg Formation-Jutland member (Oju), Martinsburg Formation-Jutland Limestone (Ojul), Epler Formation (Oe)

E. 1. Physiographic Province: New England (Reading Prong)
Subdivision: N.J. Highlands
Major Topographic Features: Central Highland Plateau, German-Longwood Valley, Passaic Range
Elevations: (ft.above sea level): ridges 400, valleys 250
Relief (ft.): 150

Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: West Hunterdon Sandstone Plateau, Red Sandstone Plain
Elevations (ft.above sea level): hills 700, valleys 250
Relief (ft.): 450

2. a. Normal Year: 44"
Dry Year: 36"
Wet Year: 55"

b. January: 30°F
July: 74°F

c. 230 days. Last killing frost: 4/25: first killing frost: 10/20

3. Land Use Map available

F. Div. of Water Resources:
South Branch Pumping Station Force Main
Div. of Parks and Forestry:
Pittstown-Landsdowne Trail (Proposed)

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	R/m Yield	Formation
24-33-326	Boro of Clinton	1968	76	475	205	Trb
24-33-455	Ortho Research Inst.	1969	42	192	70	"
24-33-456	"	1969	43	207	75	"
24-33-632	Hunterdon County Y.M.C.A.	1967	40	100	100	"

J. Geodetic Control Survey monuments described
Index Map 28; adjacent Index Maps 22,23,27

BLOCK #24-34,35

A. Califon, Flemington, High Bridge, Pittstown

B. Delaware River-Lockatong, Raritan-North Branch, South Branch

C. 2.

Map No.	Location	Period of Record
82	South Branch Raritan River at Stanton	1903-1906, 1919-8/18/55
83	Prescott Brook nr. Stanton	

3. 82 South Branch Raritan River at Stanton 1960

Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Triassic Conglomerates (Trc), Lockatong Formation (Trs), diabase (Trdb), Martinsburg Formation-Jutland member (Oju), Martinsburg Formation-Jutland Sandstone (Ojus), Epler Formation (Oe), Rickenback Formation (Or), Allentown Formation (Ca), Hardystone Sandstone (Ch), undifferentiated precambrian (pC)

E. 1. Physiographic Province: New England (Reading Prong)
Subdivision: N.J. Highlands
Major Topographic Features: Passaic Range
Elevations (ft.above sea level): ridges 350, valleys 250
Relief (ft.): 100

Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, Cushetunk Range
Elevations (ft.above sea level): ridges 800, valleys 150
Relief (ft.): 650

2. a. Normal Year: 45"
Dry Year: 35"
Wet Year: 61"

b. January: 30°F
July: 74°F

c. 231 days. Last killing frost: 4/25; first killing frost: 10/20

3. Land Use Map available

F. Div. of Water Resources:
Round Valley Reservoir

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
24-34-286	Hunterdon Ed.Rec.Council	1971	40	105	100	Pg
△24-34-738	Armor Builders	1979	50	102	75	Trb
24-34-799	Friendship Village	1976	62	400	55	"
△24-34-845	Riemer Const.Co.	1965	73	240	75	"
△24-34-894	Thomas J. Lipton, Inc.	1962	44	502	564	"
△24-34-895	"	1962	45	504	340	"
24-35-163	Koko Kalo Builders	1972	63	170	75	"
24-35-476	N.J. Bur. of Parks	1971	119	200	75	"
24-35-493	"	1971	130	200	75	"
△24-35-743	M. Barda, Cont.	1972	60	100	100	"

J. Geodetic Control Survey monuments described
Index Map 28; adjacent Index Maps 23,29

A. High Bridge, Pittstown

B. Delaware River-Lockatong Creek, Raritan-South Branch

C. Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Lockatong Formation (Trl), Stockton Formation (Trs), diabase (Trdb), Argillaceous Brunswick Formation (Tra)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: West Hunterdon Sandstone Plateau
Elevations (ft.above sea level): ridges 600, valleys 400
Relief (ft.): 200

2. a. Normal Year: 44"
Dry Year: 35"
Wet Year: 54"

b. January: 30°F
July: 75°F

c. 233 days. Last killing frost: 4/25; first killing frost: 10/20

3. Land Use Map available

F. Flemington:
Municipal Watershed

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
24-43-196	Titanium-Zirconium, Inc.	1955	20	150	75	Tr

J. Geodetic Control Survey monuments described
Index Maps 28,32; adjacent Index Maps 27,33

A. Flemington, Hopewell, Pittstown, Stockton

B. Delaware River-Lockatong Creek, Raritan River-South Branch

C. 1. Flemington - Non-recording temperature and precipitation gauges

2. Map No.	Location	Period of Record
84	Walnut Brook near Flemington	1936-1961
85	South Branch Raritan River at Flemington Junc.	3/12/36
3. 278	South Branch of Raritan River at Three Bridges (Main St.)	1964-
315	Assiscong Creek at Flemington on Rt.31	1966-
323	Bushkill Creek at Flemington on River Rd.	1967-
327	Neshanic River Branch at Copper Hill (Rt.31)	1967-
329	Branch of Neshanic River next bridge up from main branch on Rt.31 near Flemington	1967-

Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Lockatong Formation (Trl), diabase (Trdb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, West Hunterdon Sandstone Plateau
Elevations (ft.above sea level): ridges 500, valleys 100
Relief (ft.): 400

2. a. Normal Year: 45"
Dry Year: 34"
Wet Year: 57"

b. January: 30°F
July: 74°F

c. 235 days. Last killing frost: 4/25; first killing frost 10/20

3. Land Use Map available

F. Flemington:
Municipal Watershed

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
□ 24-44-161	Somerville Water Co.	1971	252	355	100	Trb,Trl
△ 24-44-214	Hunterdon Medical Center	1961	43	412	162	Trb
△ 24-44-215	"	1964	52	436	242	"
△ 24-44-222	Flemington Fair & Carnival Assoc.	1964	39	500	265	"
△ 24-44-222	Cary Chemical Co.	1963	43	500	470	"
△ 24-44-227	Hunter-Douglas Corp.	1955	33	500	195	"
△ 24-44-244	Pinewall Investment Corp.	1966	50	230	75	"
△ 24-44-252	Hunter Douglas Corp.	1955	35	518	307	"
□ 24-44-254	Hunterdon Cent.Reg.H.S.	1959	32	207	125	"
△ 24-44-263	Cary Chemical Co.	1961	41	500	524	"
△ 24-44-263	Sicking Corp.	1960	-	546	517	"
△ 24-44-276	Dural Rubber Co.	1956	32	443	440	"
△ 24-44-282	Riegel Paper Co.	1963	42	300	272	"
△ 24-44-282	"	1963	41	450	346	"
△ 24-44-284	Samuel Stothoff Co.	1965	41	200	80	"
△ 24-44-284	Flemington Auto Rentals Inc.	1965	33	375	178	"
△ 24-44-293	U.S.Bronze Powder Wks.,Inc.	1957	30	230	103	"
△ 24-44-294	U.S. Bronze Co.	1956	30	480	411	"
△ 24-44-328	Standard Pressed Steel	1967	50	300	100	"
△ 24-44-341	Cary Chemical Co.	1956	31	412	530	"
△ 24-44-341	"	1957	29	519	703	"
△ 24-44-341	"	1959	33	502	430	"
△ 24-44-343	"	1964	61	552	620	"
▽ 24-44-364	Raritan Twp.	1970	50	165	70	"
△ 24-44-366	Supreme Milk & Cream Co.	1956	24	297	328	"
△ 24-44-461	Johanna Farms	1969	52	400	230	"
△ 24-44-462	"	1963	41	501	70	"
△ 24-44-516	Sussleaf Flemington, Inc.	1961	41	301	280	"
□ 24-44-518	Raritan Twp.	1971	60	150	200	"
△ 24-44-521	Bruce-Shalgasser	1965	40	400	450	"
□ 24-44-522	Boro of Flemington	1973	50	400	261	"
△ 24-44-542	Sinclair Refining Co.	1968	130	170	100	"
□ 24-44-615	Flemington-Raritan Bd.of Ed.	1967	65	249	235	"
□ 24-44-628	Shelton Builders, Inc.	1967	50	123	80	"
□ 24-44-696	Reimer Const. Co.	1967	50	93	100	"
△ 24-45-148	Ciba Pharmaceuticals	1964	32	204	65	"
△ 24-45-148	"	1965	42	305	430	"

J. Geodetic Control Survey monuments described
Index Maps 28,32,33; adjacent Index Map 29

A. Hopewell, Lambertville, Pennington, Stockton

B. Delaware River-Lockatong Creek; Raritan River-South Branch, Millstone

C. 1. Wertsville - Non-recording precipitation gauge

2. Map No. Location — Period of Record
424 Woodsville Brook at Woodsville — 1947-1958, 1964-
425 Stony Brook at Glenmoore — 1957-

3. 310 Stony Brook near Hopewell — 1965-

Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Lockatong Formation (Trl), Stockton Formation (Trs), Basalt Flows (Trbs), Diabase (Trdb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, Sourland Mountain.
Elevations (ft.above sea level): ridges 500, valleys 200
Relief (ft.): 200

2. a. Normal Year: 45"
Dry Year: 34"
Wet Year: 55"

b. January: 31°F
July: 75°F

c. 238 days. Last killing frost: 4/25; first killing frost: 10/20

F. Div. of Fish, Game and Shellfisheries:
Amwell Lake (Linvale)

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
△27-04-163	Copper Hill Country Club	1964	40	300	900	Trb
△27-04-163	"	1964	40	156	180	"
△27-04-217	A. L. Lewis, Inc.	1965	32	300	150	"
27-04-828	B. J. Costello	1968	30	100	100	"
27-05-763	Hopewell Boro	1968	50	380	125	"

J. Geodetic Control Survey monuments described
Index Maps 32,33,36; adjacent Index Map 37

SUBJECT TO REVISION

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 403021
LONGITUDE 745029

DRAFT

SCALE: 1:63,360
~~(1 Inch = 1 Mile)~~
1 mile

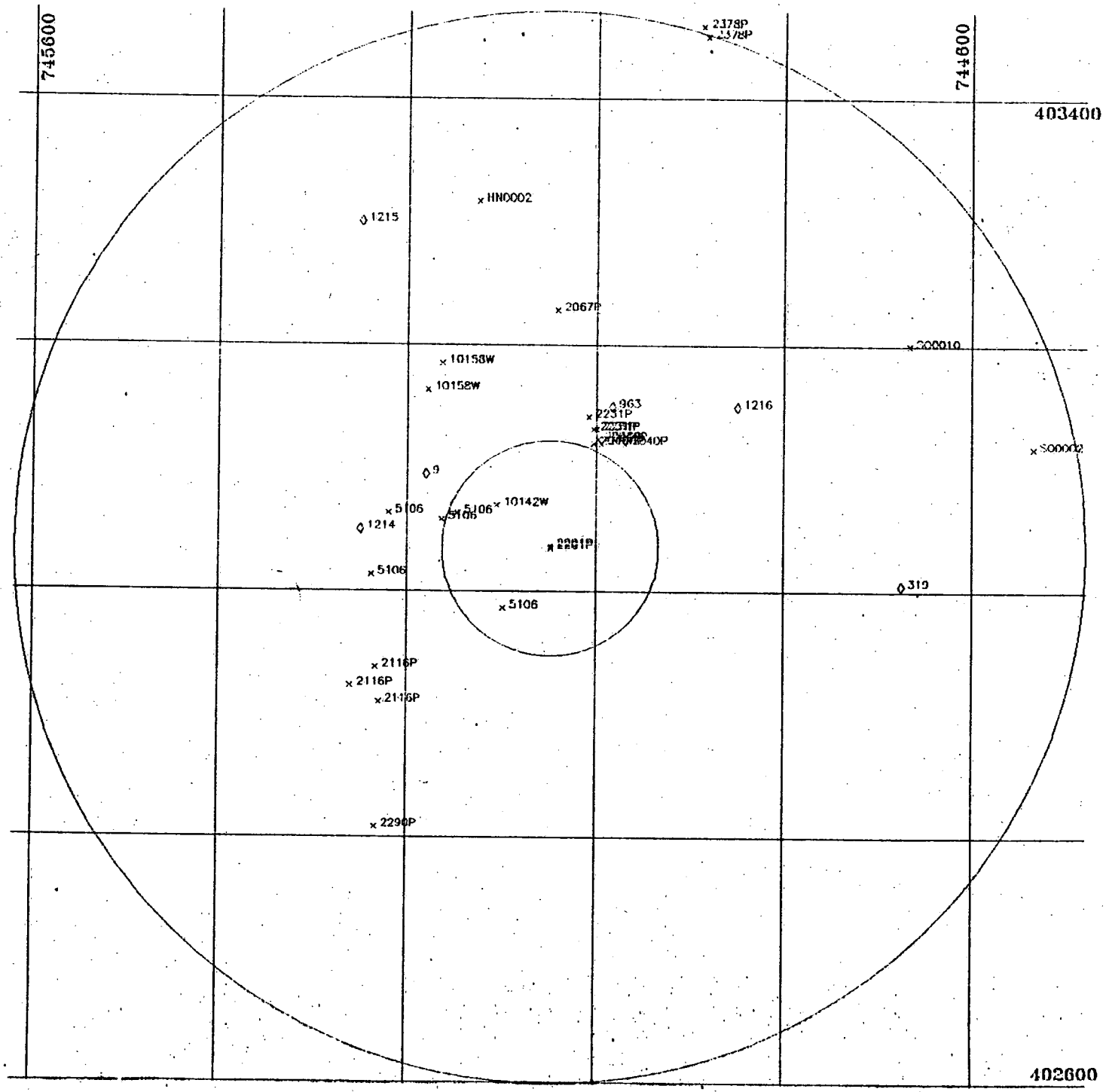
× WATER WITHDRAWAL POINTS
◊ NJGS CASE INDEX SITES
1 MILE AND 5 MILE RADII INDICATED

NJGS CASE INDEX DATA RETRIEVED FROM:
NEW JERSEY GEOLOGICAL SURVEY
ON 12/22/87

PLOT PRODUCED BY:
NJDEPE
WATER TECHNICAL PROGRAMS
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625
DATE: 11/27/91

MAP 8

SUBJECT TO REVISION



Page 1 of PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 403021 LAT. 745029 LON. (IN ORDER BY PERMIT NUMBER) - 11/27/91

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LL/ACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
10142W	FLEMINGTON AGRICULTURAL FAIR	2406335	WELL M	403042	745103	T	0.6	19	21	500			
10150W	HUNTERDON MEDICAL CENTER	2404266	#3	403138	745147	T	1.9	19	21	412	GTRB		
	HUNTERDON MEDICAL CENTER	2405570	#4	403151	745138	T	2.0	19	21	436	GTRB		
2040P	TENNECO INC.	2402063	1	403112	744957		1.1	19	21	418	GTRB		450
	TENNECO INC.	2402335	2	403112	744957	F	1.1	19	21	519	GTRB		450
	TENNECO INC.	2403297	3	403112	744957	F	1.1	19	21	502	GTRB		450
	TENNECO INC.	2403298	4	403114	744959		1.1	19	21	101	GTRB		450
	TENNECO INC.	2404192	5	403112	745002	F	1.1	19	21	500	GTRB		450
	TENNECO INC.	2404997	6	403112	744942	F	1.2	19	21	500	GTRB		450
	TENNECO INC.	2405097	7	403114	744955	F	1.1	19	21	450	GTRB		450
	TENNECO INC.	SOUTH BRANCH	RARITAN R.	403112	745002		1.1	19	21		SRSER		3000
2067P	LIPTON PRODUCTION, INC.	2404387	1	403217	745025		2.2	19	21	502	GTRB		600
	LIPTON PRODUCTION, INC.	2404388	2	403217	745025		2.2	19	21	504	GTRB		325
	LIPTON PRODUCTION, INC.	2403719	3	403217	745025		2.2	19	21	450	GTRB		
2116P	JOHANNA FARMS INC.	2407201	5	402914	745236	T	2.3	19	21	400	GTRB		230
	JOHANNA FARMS INC.	2411368	6	402906	745218	T	2.1	19	21	400	GTRB		300
	JOHANNA FARMS INC.	2415203	STANDBY #7	402923	745220	T	2.0	19	21	400	GTRB		300
2201P	U.S. BRONZE POWDERS, INC.	2402354	1	403021	745029		0.0	19	21	480	GTRB		300
	U.S. BRONZE POWDERS, INC.	2406561	2	403022	745029		0.0	19	21	500	GTRB		250
2231P	TREDEGAR INDUSTRIES INC.	2401460	1	403119	745000	T	1.2	19	21	420	GTRB		600
	TREDEGAR INDUSTRIES INC.	2401510	2	403119	745002	T	1.2	19	21	400	GTRB		600
	TREDEGAR INDUSTRIES INC.	SOUTH BRANCH	RARITAN R.	403125	745005	U	1.3	19	21		SRSER		
2290P	COPPER HILL COUNTRY CLUB	2405461	2	402906	745220		3.1	19	21	166	GTRB		550
	COPPER HILL COUNTRY CLUB	4400017	1	402906	745220		3.1	19	21	300	GTRB		50
2378P	STANTON PROPERTIES	2423341	3	403430	744950	F	5.0	19	22	300	GTRB		220
	STANTON PROPERTIES	PROPOSED WELL	2	403435	744953	F	5.1	19	22		GTRB		
5106	FLEMINGTON BOROUGH	2411748	COURT #5	403035	745138		1.0	19	09	350	GTRB		225
	FLEMINGTON BOROUGH	2411822	MEMORIAL 6	403038	745128		0.9	19	09	400	GTRB		
	FLEMINGTON BOROUGH	2415044	RT 12, #7	403008	745223		1.7	19	09	510	GTRB		250
	FLEMINGTON BOROUGH	2409411	REAVIL 4	402952	745059		0.7	19	09	400	GTRB		250
	FLEMINGTON BOROUGH	4400045	FILTER PL.	403038	745212	U	1.5	19	09	405	GTRB		60
HN0002	FARM SOLD	SO. BR RARITAN	STREAM 1	403310	745115	F	3.3	19	22		SRSER		
S00002	JOHN VERMEULEN & SONS INC	SO.BR. RARITAN	STREAM 1	403110	744520	F	4.6	35	04		SRSER		
	JOHN VERMEULEN & SONS INC	2517010	WELL 1	403110	744520	F	4.6	35	04	235	GTRB		200
S00010	OSTERMAN NURSERY INC	POND	1	403200	744640	F	3.8	35	13	4	GTRB		
	OSTERMAN NURSERY INC	2525177	WELL 3	403200	744640	F	3.8	35	13	200	GTRB		10
	OSTERMAN NURSERY INC	STREAM	1	403200	744640	F	3.8	35	13		SRSER		
	OSTERMAN NURSERY INC	4500088	WELL 1	403200	744640	F	3.8	35	13	200	GTRB		40
	OSTERMAN NURSERY INC	2518222	WELL 2	403200	744640	F	3.8	35	13	360	GTRB		15

Number of Observations: 39

Page 1 of NJGS CASE INDEX SITES WITHIN 5.0 MILES OF 403023 LAT, 745029 LON, AS OF 12/22/87 (IN ORDER BY SITE NUMBER) - 11/27/91

SITENUM	NAME	LAT	LON	DISTANCE	CONTAM	FMCODE1	FMCODE2	STATUS1	STATUS2
9	AGWAY, FLEMINGTON, HUNTERDON CO.	403057	745148	1.3	63	0	0	7	
319	KRYSOWATY FARM, HILLSBOROUGH, SOMERSET CO.	403000	744645	3.3	1	3070	0	4	G
963	AGWAY PETROLEUM, FLEMINGTON JCT., HUNTERDON CO.	403130	744930	1.4	0	0	0	3	
1214	FLEMINGTON / RARITAN TWP. BARIUM CONTAM., HUNTERDON CO.	403030	745230	1.8	38	3070	3050	1	
1215	CHERRY HILL ESTATES WELL CONTAM., RARITAN TWP., HUNTERDON CO.	403300	745220	3.5	66	3090		1	G
1216	HEATHER RUN WELL CONTAMINATION, READINGTON TWP., HUNTERDON CO.	403130	744830	2.2	66	3070		1	

Number of Observations: 6

ATTACHMENT A

Duplicate 10

NJDEP INSPECTION FORM

10-09-01

Report Prepared for:

Generator [X]

Transporter [ ]

HWM (TSD) facility [X]

Facility Information

Name: United States Bronze Powders

Address: S/S Route 202
Flemington

Lot: 4 Block: 40

County: Hunterdon

Phone:

EPA ID#: NJ D002344190

Date of Inspection: 5/31/83

Participating Personnel

State or EPA personnel: Mike Nalbone

Facility personnel: John Niechwiedowicz
Plant Supt.

Report Prepared by Name: Mike Nalbone

Region: Central

Telephone #: (609) 292-0715

Reviewed by: Kevin Gaskin

Date of Review: 7-12-83

A1

TIME IN _____

TIME OUT

FACILITY NAME: U S Bronze Powder

ADDRESS: S/S Route 202

Flemington NJ

TIME IN: _____

COUNTY: HUNTERDON

TIME OUT: _____

EPA ID #: NJD002344190

DATE OF INSPECTION: 5/31/83

PHOTOS TAKEN ☐ YES ☒ NO

If yes, how many? _____

SAMPLES TAKEN ☐ YES ☒ NO NUMBER OF SAMPLES _____

NJDEP ID # _____

MANIFESTS REVIEWED ☒ YES ☐ NO

Number of manifests in compliance 80

Number of manifests not in compliance _____

List manifest document numbers of those manifests not in compliance.

owner: US Bronze Powder
Works Inc.
R D - 7
Flemington N.J.

A2

CONFIDENTIAL - RECOMMENDATIONS

TO: File

FROM: Mike Nalbone DATE: 5/31/83

SUBJECT: U.S. Bronze Powders

I recommend that a follow-up be scheduled which I will do for ascertaining information about accumulation of waste on site.

A3

Summary of Findings

Facility Description and Operations

U S Bronze Powders has been operating since 1957. The company up to 1980 made aluminum into powder and also recovered copper from large solid plates. Now the only money making operation is the recovery of copper off the plates.

The recovery process starts with a solid plate (copper coated). The plate is placed thru a series of twelve vats. These vats have a mixture of Copper Sulfate and Sulfuric Acid which draws off the copper. Additional electrical charges added to various vats also aid in removing the copper.

An Above ground tank holding approximatly 3000 gallons is used for waste copper sulfate solution which is taken offsite by Waste Conversion in Pennsylvania. Prior to waste Conversion as the TSDF the company use SCA Earthline.

Another above ground tank used for the companies waste oil is approximatly 275 gal

A4

Summary of Findings Page 2

Facility Description and Operations

The tank holds waste oil which the company generates and is designated of three types. ① synthetic oil, ② motor oil ③ hydraulic oil

Most of the oil generation occurs from various machinery and working equipment. The waste oil is picked up by L. D. C located in Berlin N.J. (609) 767-6644 Checking with the Southern Office I found out that L. D. C stands for Lightman Drum Company. I was informed this company has a temporary authorization as a transfer facility from the N.J. D.E.P.

During my inspection around the property I observed aluminum scrap in 55 gallon drums. The left over scrap on the yard is sent to Kansis City Recycling which will turn it into Aluminum Ingots. I also observed 23 fifty five gallon steel drums containing waste oil. These drums were not labeled and were of poor integrity. I recommended to Mr Niechniedowicz to place the material into the waste oil tank.

A5

Describe the activities that result in the generation of hazardous waste.

Waste is generated from changing oil from machinery. Waste is also generated by recovery of copper that requires changing tank solutions.

Identify the hazardous waste located on site, and estimate the approximate quantities of each. (Identify Waste Codes)

D002 Corrosive waste - Approximatly 1000 gallons
F007 Plating Solutions - Approximatly 1000 gallons
Waste oil - - Approximatly 2200 gallons

GENERATOR INSPECTION CHECKLIST

		YES	NO	N/A
7:26-8.5	Hazardous waste determination			
	(a) Did the generator test its waste to determine whether it is hazardous?	X	—	—
	Is the waste hazardous?	X	—	—
	Is the generator determining that its waste exhibits a hazardous waste characteristic(s) based on its knowledge of the material(s) or processes used?	X	—	—
	Has hazardous waste been shipped off site since November 19, 1980?	X	—	—
	If yes, how many shipments, off site, have been made and describe the approximate size of an average shipment made on a monthly basis. If facility is a small quantity generator, please explain.	Approximatly 80 Shipments have been made.		
7:26-7.4(a)1	Does the generator have an EPA ID #?	X	—	—
7:26-7.4(a)4	Does each manifest have the following information? Please circle the elements missing and obtain a copy of the incomplete manifests. (List those manifests that are deficient)	X	—	—
7:26-7.4(a)4i	The generator's name, address and phone number?	X	—	—
7:26-7.4(a)4ii	The generator's EPA ID number?	X	—	—
7:26-7.4(a)4iii	The transporter(s) name, address and phone number?	X	—	—
7:26-7.4(a)4iv	The transporter(s) EPA ID number?	X	—	—
7:26-7.4(a)4v	The name, address and phone number of the designated TSD facility?	X	—	—
7:26-7.4(a)4vi	The TSDF's EPA ID number?	X	—	—
7:26-7.4(a)4vii	The name, type and quantity of hazardous waste being shipped, including such particulars as may be required regarding same?	X	—	—

A7

SHORT TERM ACCUMULATION STANDARDS (FOR GENERATORS WHO ACCUMULATE WASTE IN CONTAINERS FOR 90 DAYS OR LESS)

		YES	NO	N/A
7:26-9.4	Containers			
	What type of containers are used for storage. Describe the size, type and quantity and nature of waste (e.g., 12 fifty five gallon drums of waste acetone).	55 gallon steel Drums used for waste oil storage		
7:26-9.4(d)3	Do the containers appear to be in good condition, not in danger of leaking?		X	
	If no, please describe the type, condition and number of leaking or corroded containers. Be detailed and specific.	Drums were in poor condition. No Leakers were noted		
7:26-9.4(d)4i	Are all containers securely closed except those in use?	X		
7:26-9.4(d)4iii	Do containers appear to be properly handled or stored in a manner which will minimize the risk of the container rupturing or leaking?	X		
7:26-9.4(d)4iv	Are containerized hazardous waste segregated in storage by waste type?	X		
7:26-9.4(d)4v	Is every container arranged so that its identification label is visible?	X		
7:26-9.4(d)5	Is the storage area inspected at least daily?	X		
7:26-9.4(d)6	Are containers holding ignitible and reactive wastes located at least 50 feet (15 meters) from the facility's property line?			X
7:26-11.2	Tanks			
	What are the approximate number and size of tanks containing hazardous waste?			
	Identify the waste treated/stored in each tank.	Two tanks were noted. One 3000 gallon tank for storage of copper sulfate solution and a 275 gallon tank for waste oil.		

A8

ATTACHMENT B

H

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

DWM-029

GENERATOR INSPECTION REPORT

FACILITY INFORMATION

FACILITY NAME: US Bronze Powders

FILE NUMBER: 10-09-01

VHT FACILITY FILE NUMBER: _____

PERMIT #: _____

REGION: N

INSPECTION DATE: 6/1/89 and 6/2/89

INCIDENT/CASE NUMBER: _____

INSPECTION TYPE: Generator

RESPONSIBLE AGENCY CODE: S

INSPECTOR'S NAME: Gary Pearson

INSPECTOR'S AGENCY: NJDEP

INSPECTOR'S BUREAU: NFO

EPA ID NUMBER: NJD 002 374 190

ADDRESS: Rt 202 north
Flemington

LOT: 4 BLOCK: 40

COUNTY: Hunterdon

FACILITY PERSONNEL: Bruce Woltz
John Niechniedowicz

TELEPHONE #: _____

OTHER STATE/EPA PERSONNEL: Ken

REPORT PREPARED BY: Gary Pearson

REVIEWED BY: _____

B'

US Bronze Powders
Summary of Findings

US Bronze has been operating at this site since 1957, up into 1980 they made aluminum into powder and recovered copper from large plates. They now manufacture copper and brass flake by atomization and milling. They have two site production wells. They are now developing a new ink producing process which is generating solvent waste. They do not yet know if this will develop into a new waste stream.

The former process which recovered copper from plates consisted of dioping the copper coated plates in a series of vats containing copper sulfate and sulfuric acid which drew off the copper. They are now conducting a clean-up of this area due to elevated pH and copper sulfate levels in the soils.

They have an aboveground 275 gallon tank for their waste oil and they have a Safety-Kleen station. They were not manifesting the Safety-Kleen waste.

At the time of the inspection they had eight containers in storage. They were not properly managing those containers. The facility personnel indicated that the eight 55 gallon metal drums contained the lab solvent mixture from the development of the ink production process. The waste was a TCE/toluene/acetone/hexane mixture.

In addition they generate waste from the R&D/QA QC lab and normal equipment maintenance.

B2

ATTACHMENT C

UNITED STATES BRONZE POWDERS, INCORPORATED
P.O. Box 31, Rte. 202, Flemington, N.J. 08822-0031
Telephone: (201) 782-5454 Telex: 83-3488 Fax: (201) 782-3489

July 10, 1989

Ms. Joanne DeMail
Safety-Kleen Corporation
P.O. Box 471
Bound Brook, NJ 08805

Dear Joanne:

I am writing to follow up on our telephone conversation today. As I mentioned, all recycling of our Maintenance Shop's waste cleaner, under Account No. 2-118-04-1645-2, must be accompanied by uniform hazardous waste manifest forms. For the preparation of future waste manifest forms, I am notifying you that our US EPA ID Number is NJD 002 344 190.

I understand that the only documentation of our past waste cleaner recycling exists as the Service/Sales Acknowledgment forms that were generated during the scheduled service. If possible, I would appreciate confirmation from Safety-Kleen Corporation that the waste cleaner we generated since 1986 was received and recycled.

Thank you for your help on these matters. If you have any questions or comments, then please feel free to contact me.

Sincerely,

UNITED STATES BRONZE POWDERS, INC.

Bruce K. Klotz

Bruce K. Klotz
Project Engineer

cc: Gary Pearson

C!

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P Box 2063
Harr..urg, PA 17120

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

ER-SWM-51:REV. 10/84 — Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 3 4 4 1 9 0 — Manifest Document No.: 06123

2. Page 1 of 1

Information in the shaded areas is not required by Federal law but is required by State law.

A. State Manifest Document Number: PAB 3873926

3. Generator's Name and Mailing Address:
U S Bronze Powders
Route 202 Flemington, N J 08822

4. Generator's Phone: (201 782 5454

B. State Gen. ID: N J D 0 0 2 3 4 4 1 9 0

5. Transporter 1 Company Name: Waste Conversion Inc

6. US EPA ID Number: P A D 0 8 5 6 9 0 5 9 2

C. State Trans. ID: NJDEP806209 / PA-AH 0139

D. Transporter's Phone: 215 822 8996

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Trans. ID: PA-AH

F. Transporter's Phone:

9. Designated Facility Name and Site Address:
Waste Conversion Inc
2869 Sandstone Drive
Hatfield, Pa 19440

10. US EPA ID Number: PA D 0 8 5 6 9 0 5 9 2

G. State Facility's ID: Not Required

H. Facility's Phone: 215 822 8996

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Corrosive Liquid n o s Corrosive Material UN1760	001	TT	3000	G	D002
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above (include physical state and hazard code)

	Haz. Code	Physical State		Haz. Code	Physical State
a.	C	L	c.		
b.			d.		

K. Handling Codes for Wastes Listed Above: a. S02 T21 740,745 b. c. d.

15. Special Handling Instructions and Additional Information: Lab Code 0201 Waste Copper Sulfate Solution

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002 (b) of RCRA, I also certify that I have a program in place to reduce volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name: George Nodes — Signature: George Nodes — Month/Day/Year: 1 17 86

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Charles Engle — Signature: Charles Engle — Month/Day/Year: 1 17 86

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Month/Day/Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: David Fernbacher — Signature: David Fernbacher — Month/Day/Year: 1 17 86

PAB 3873926

EPA Form 8700-22 (3-84)

n2

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Bureau of Waste Management
P. O. Box 2063
Harrisburg, PA 17120

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

ER-SWM-81:REV. 10/84 Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJD002344190 Manifest Document No. 05153

2. Page 1 of — Information in the shaded areas is not required by Federal law but is required by State law.

A. State Manifest Document Number: PAB 3858746

3. Generator's Name and Mailing Address
U S Bronze Powders
Route 202 Flemington, N J 08822

4. Generator's Phone (201) 782 5454

B. State Gen. ID: NJD002344190

5. Transporter 1 Company Name: Waste Conversion Inc

6. US EPA ID Number: PAD982560502

C. State Trans. ID: NJDEPS06209 PA-AH 0139

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone: 215 822 8996

E. State Trans. ID: PA-AH

9. Designated Facility Name and Site Address
Watee Conversion Inc
2869 Sandstone Drive
Hatfield, Pa 19440

10. US EPA ID Number: PAD066560502

F. Transporter's Phone ( )

G. State Facility's ID: Not Required

H. Facility's Phone (215) 822 8996

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Watee Corrosive Liquid n o s Corrosive Material UN1760	001	TT	5500	G	D002
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above (include physical state and hazard code)

	Haz. Code	Physical State		Haz. Code	Physical State
a.	C	L	c.		
b.			d.		

K. Handling Codes for Wastes Listed Above: a. T45 T40 T31 S02 T23 b. c. d.

15. Special Handling Instructions and Additional Information: Lab Code 0201 Copper Sulfate Solution

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002 (b) of RCRA, I also certify that I have a program in place to reduce volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name: Terence Miles — Signature: [signature] — Month 7 Day 29 Year 86

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Charles Engle — Signature: Charles Engle — Month 07 Day 29 Year 86

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: William Hesser — Signature: [signature] — Month 07 Day 29 Year 86

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 642717164

2. Page 1 of

Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address
U S BRONZE POWDERS INC
RT 202N BOX 31
FLEMINGTON NJ 08822

4. Generator's Phone (201) 782-5454

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name
SAFETY-KLEEN-CORP.

6. US EPA ID Number
NJD000743077

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
SAFETY-KLEEN CORP.
515 E MAIN ST
BOUND BROOK, NJ 08805

10. US EPA ID Number
NJD000743077

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste, Petroleum Naphtha, Combustible Liquid, UN 1255 D001	X	2	DM	20	G	
b. Waste, Compound, Cleaning, Liquid, Corrosive Material, NA 1760 F002-F004			DM			
c. Waste, Perchloroethylene, ORM-A, UN 1897 F002			DM			
d.						

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
2-113-04-1645
642717
TERR 04

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name: John Grim — Signature — Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: ART OSTERBERG — Signature — Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date: Month Day Year

EPA Form 8700-22 (3-84)

C4

Please print or type. (Form designed for n elite (12-p. typewriter.) Form ... oved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone 201/355-2229

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
SAFETY-KLEEN CORP.

10. US EPA ID Number

G. State Facility's ID

H. Facility's Phone 201/355-2229

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste, Petroleum Naphtha, Combustible Liquid, UN 1255 D001			DM			D001
b. Waste, Compound, Cleaning, Liquid, Corrosive Material, NA 1760 F002-F004			DM			F002
c. Waste, Perchloroethylene, ORM-A, UN 1897 F002			DM			F002
d.						

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name | Signature | Date (Month Day Year)

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Date (Month Day Year)

EPA Form 8700-22 (3-84)

05

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number | C. State Transporter's ID | D. Transporter's Phone 2017352229

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number | G. State Facility's ID | H. Facility's Phone 2017352229

SAFETY-KLEEN CORP.

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste, Petroleum Naphtha, Combustible Liquid, UN 1255 D001			DM			D001
b. Waste, Compound, Cleaning, Liquid, Corrosive Material, NA 1760 F002-F004			DM			F002
c. Waste, Perchloroethylene, ORM-A, UN 1897 F002			DM			F002
d.						

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

Printed/Typed Name	Signature	Date (Month Day Year)

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)

EPA Form 8700-22 (3-84)

26

VHW-001 (REV. 9-84)

State of New Jersey
Department of Environmental Protection
Division of Waste Management
CN 028, Trenton, NJ 08625

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of | Information in the shaded areas is not required by Federal law.*

3. Generator's Name and Mailing Address
U.S. BRONZE POWDERS, INC.
RT. 202 NORTH, FLEMINGTON, NJ 08822
4. Generator's Phone ( )

A. State Manifest Document Number **NJA0183784**
B. State Gen. ID

5. Transporter 1 Company Name: EASTERN HIGH VOLTAGE, INC.
6. US EPA ID Number: N J D 9 8 0 5 2 6 7 6 8
C. State Transporter 1 ID: NJSWAS8349

7. Transporter 2 Company Name: NATIONAL ELECTRIC, INC.
8. US EPA ID Number: K S D 9 8 0 7 9 1 3 2 1
D. Transporter's Phone: 609-890-8300

9. Designated Facility Name and Site Address
NATIONAL ELECTRIC, INC.
P.O. BOX 935 - HWY. 169 NO. COFFEYVILLE, KS. 67337
10. US EPA ID Number: K S D 9 8 0 9 6 4 9 9 3
E. State Transporter 2 ID: S-10333
F. Transporter's Phone: 612-469-3475
G. State Facility's ID
H. Facility's Phone: 316-251-6380

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. WASTE POLYCHLORINATED BIPHENYLS ORM-E UN 2315	0101	DM	000810	P	X387 jv
b.					
c.					
d.					

GENERATOR

J. Additional Descriptions for Materials Listed Above
a. ~~drum of debris~~ dv drum containing 1 capacitor dv
b.
d.

K. Handling codes for Wastes Listed Above
a. T03 jv
b.
c.
d.

15. Special Handling Instructions and Additional Information
EHV JOB #186-0231.015 - U.S. BRONZE POWDERS, INC.

Pickup Location:
Eastern High Voltage jv
17A Marlen Drive
Robbinsville, NJ 08691

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name: John NIECHNIEDOWICZ | Signature | Date: Month 09 Day 11 Year 86

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HERBERT L KNAPP | Signature | Date: Month 09 Day 11 Year 86

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: George Weaver | Signature | Date: Month 09 Day 10 Year 86

19. Discrepancy Indication Space
a. 1 drum containing 1 capacitor - 190 #/s jv
ALL weights APPROXIMANT

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: George H. Dunham | Signature | Date: Month 09 Day 11 Year 86

NJA0183784 C

EPA Form 8700-22 (Rev. 4-85) Previous edition obsolete

ATTACHMENT D

CFO

12-9-01

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 028, Trenton, N.J. 08625

DR. MARWAN M. SADAT, P.E.
DIRECTOR

LINO F. PEREIRA, P.E.
DEPUTY DIRECTOR

12 JAN 1984

John J. Grim, Plant Manager
United States Bronze Powders, Inc.
PO Box 31
Route 202
Flemington, New Jersey 08822

RE: Delisting of United States Bronze Powders, Inc., Flemington, Hunterdon County, EPA ID NO. NJD002344190 from TSD Facility Status

Dear Mr. Grim:

The Bureau of Hazardous Waste Engineering is in receipt of your letter dated October 18, 1983 regarding the status of the above referenced facility. The Bureau has reviewed your Part A application and has determined that United States Bronze Powders listed storage of hazardous waste in tanks (S02) only.

It is the Bureau's understanding, as explained by you in a telephone conversation with Jim Bell of my staff, that the Part A S02 activity refers to a sulfuric acid/copper sulfate solution which is generated in the manufacturing process. This solution is removed from the manufacturing process by an outside contractor who removes the solution from your facility. The solution is not treated, stored, or disposed at the above referenced facility after it is removed from the manufacturing process.

In accordance with N.J.A.C. 7:26-8.2(b), a hazardous waste which is generated in a manufacturing process is not subject to regulation under N.J.A.C. 7:26-7.1 et seq. through 11.1 et seq. until it exits the unit in which it was generated, unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated.

Therefore, on the basis of this information, the Bureau classifies your facility solely as a generator. This written acknowledgement of the declassification of the above identified facility from TSD facility status is based expressly on the review of the aforementioned correspondence. This letter makes no claim as to the extent and physical condition of the actual hazardous waste activities occurring at the site mentioned above.

D1

Your company's hazardous waste facility is no longer included in DEP's list of "existing facilities" (see N.J.A.C. 7:26-1.4 and 12.3) and therefore does not need to conform with the interim operating requirements of N.J.A.C. 7:26-1 et seq. for "existing facilities". It is the company's responsibility to operate within the conditions listed above. To operate a hazardous waste facility without prior approval from the DEP is a violation of the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.

Should you have any questions on this matter, please contact my office at (609) 292-9880.

Very truly yours,

Frank Coolick, Chief
Bureau of Hazardous Waste Engineering

EP13/jb

c: Dave Shotwell
Joel Golumbek
Shirlee Schiffman

D2

ATTACHMENT E

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
BUREAU OF INDUSTRIAL SITE EVALUATION

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT
INITIAL NOTICE
GENERAL INFORMATION SUBMISSION

(This is the first part of a two-part application form. This information must be submitted within 5 days following public release of a decision to close operations or the signing of a sales agreement or option to purchase involving an Industrial Establishment as defined in N.J.S.A. 13:1K-6, the Environmental Cleanup Responsibility Act.)

Please refer to N.J.A.C. 7:1-3.7 et seq. before filling out this form.
Answer all questions. Please print or type.

Date 11/26/86

1. A. Industrial Establishment

Name United States Bronze Powders, Incorporated Telephone No. (201) 782-5455

Street Address Route 202, P. O. Box 31

City or Town Flemington State NJ Zip Code 08822-0031

Municipality Raritan Township County Hunterdon

B. Lot number 4 Block number 40

C. Standard Industrial Classification (SIC) Number 3399

D. Current Owner

Name United States Bronze Powders, Incorporated Telephone No. (201) 782-5455

Street Address Route 202, P. O. Box 31

Municipality Raritan Township State NJ Zip Code 08822-0031

E. If the industrial establishment discharges to a publicly-owned treatment plant, provide the name and address of that facility.

Name _____ Telephone No. _____

Street Address _____

Municipality _____ State _____ Zip Code _____

FOR DEP use only
Date Received 12/1/86
Notice Number 860400

ECRA-1 5/84

E1

F. Has an ECRA application been filed for this Industrial Establishment or location previously? no If so, when?_____ For what reason?_____

_____

Final Disposition?_____

G. How is this Industrial Establishment heated?(gas,oil,electricity) oil

2. Previous owner(s) and current address (es)(attach additional sheets if necessary).

Name	Current Address	Description of the Operation
Clarence Alles	unknown	unknown
Marie M. Alles	unknown	unknown

Property conveyed to current owner in 1955.

3. If the transaction initiating an ECRA review is the closure of operations, fill in the date of public release of the decision to close the facility and enclose a copy of the public announcement.

n/a

Date of the public release of the decision_____

Is the public release enclosed?_____ Yes _____No

If you checked "no", state the reason(s)_____

_____

_____

E2

4. If the transaction initiating an ECRA review is an agreement of sale or option to purchase, fill in the date of the execution of that instrument plus provide a copy of the document n/a

Name and address of the other parties to the transfer:

Name	Street Address and Municipality	Phone No.
a corporation to be formed	Route 202, P. O. Box 31 Flemington, NJ 08822-0031	

Is a copy of the agreement of sale or option to purchase attached? ____ Yes X No

If you checked "no", state the reason(s) There is no written agreement of sale.

5. Actual date proposed for closure of operations or transfer of title Before December 31, 1986

6. Authorized agent designated to work with the Department.

Name Allen V. Brown, Esquire

Street Address 45 E. High St., P. O. Box 520

Municipality Somerville State NJ Zip Code 08876

Telephone No. (201) 722-5700

7. List all federal and state environmental permits applied for and received at this facility (attach additional sheets if necessary).

____ Check here if no permits are involved.

E3

A. New Jersey Bureau of Air Pollution Control.

Permit Number	Date of Approval or Denial	Reason for Denial (if applicable)	Expiration Date
See attached summary sheet for permits pursuant to N.J.S.A. 26:2C-9.2			

B. New Jersey Pollutant Discharge Elimination System

Number	Discharge Activity	Date issued or Denied	Expiration Date	Body of Water Discharged into
See attached sheet for details of permits issued pursuant to N.J.S.A. 58:10A-1.				
This permit was issued on 12/20/82 and expires on 1/31/88.				

C. United States Environmental Protection Agency(EPA) Identification Number.

NJ D002344190

D. All other federal, state, local environmental permits.

Agency Issuing Permit	Permit Number	Date of Approval or Denial	Expiration Date
DEP Division of Water Resources	2201P	6/30/86	6/30/87

BUSINESS NAME — PLANT NAME — PLANT CONTACT

UNITED STATES BRONZE POWDERS, INC.

T	STATUS	STACK	COMPANY DESIGNATION	CERT	LAST INS	BY	EXPIRATION DATE
S	PERM	001	BRASS FOUNDRY BAGHOUSE	037143	03/13/85	025	5/8/88
	DELETE	002	RED METAL MELTING FURNACE				
	DELETE	003	FOUNDRY POWDER COLLECTOR				
	DELETE	004	MELT AREA BRONZE ATOMIZA		02/23/82	021	
	DELETE	005	POLISHING DEPT BH #10		02/23/82	021	
	DELETE	006	POLISH DEPT DUMP&SCREEN		02/23/82	021	
	DELETE	007	MFG METAL POWDERS RIBBON BLENDER		02/23/82	021	
	DELETE	008	COLOR RM BURNING EXH		02/23/82	021	
	PERM	009	BALL MILL #7 w/ 2 MICRO PULSAIRE	043618	03/13/85	025	5/13/91
88	PERM	010	BALL MILL AREA	039311	03/13/85	025	5/17/88
88	PERM	011	BALL MILL AREA	039312	03/13/85	025	5/17/88
88	PERM	012	BALL MILL AREA	039313	03/13/85	025	5/17/88
88	PERM	013	BALL MILL AREA	039314	03/13/85	025	5/17/88
88	PERM	014	BALL MILL AREA	039315	03/13/85	025	5/17/88
88	PERM	015	BALL MILL AREA	039316	03/13/85	025	5/17/88
91	PERM	016	BALL MILL #3 w/ 2 MICRO PULSAIRE	043619	03/13/85	025	5/13/91
84	DELETE	017	LARGE GENCO BLENDER, B.H.	042964	02/23/82	021	
89	PERM	018	BLENDER	042964	03/13/85	025	4/30/89
	GRAN	019	BALL MILL		03/13/85	025	
	GRAN	020	BALL MILL		03/13/85	025	
	GRAN	021	BALL MILL		03/13/85	025	
	GRAN	022	BALL MILL		03/13/85	025	
	GRAN	023	BALL MILL		03/13/85	025	
	GRAN	024	BALL MILL		03/13/85	025	
	GRAN	025	BALL MILL		03/13/85	025	
	GRAN	026	BALL MILL		03/13/85	025	
	GRAN	027	BALL MILL		03/13/85	025	
	GRAN	028	BALL MILL		03/13/85	025	
	GRAN	029	BALL MILL		03/13/85	025	
	GRAN	030	BALL MILL		03/13/85	025	
	DELETE	031	MAGNUS WASHER TANKS		03/17/83	021	
	GRAN	032	BALL MILL		03/13/85	025	
87	PERM	033	TOTE BIN UNLOADER & PACKER LINE	060644	03/13/85	025	1/27/37(app. pending)
87	PERM	034	ATOMIZING COLLECTION BIN STACK	060793	03/13/85	025	2/19/87
90	PERM	035	PLANT VACUUM, SCREEN & LOAD SYS.	061441	03/13/85	025	6/10/90
86	TEMP	036	#36	072362	02/12/87		
86	TEMP	037	#37	072604	02/12/87		

TUS

ATTACHMENT F

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

JAN 27 RECD

George G. McCann, P.E.
Director

JAN 25 1989

M E M O R A N D U M

TO: GARY PEARSON, NORTHERN BUREAU OF FIELD OPERATIONS, DHWM, PARSIPPANY

FROM: GIL OUDIJK THROUGH KENNETH SIET, BUREAU CHIEF, BUREAU OF GROUND-WATER POLLUTION ABATEMENT, DWR

SUBJECT: U. S. BRONZE POWDERS, INC., RARITAN TOWNSHIP, HUNTERDON COUNTY - RECOMMENDATION FOR GROUND-WATER INVESTIGATION

U. S. Bronze Powders, Inc. is located on northbound US Route 202 in Raritan Township, Hunterdon County. U. S. Bronze manufactures copper metal products. Large vats of copper sulfate were kept in the Fernlock building (figure 1) with much spillage occurring onto an earthen floor and the ground outside the building. Seventeen soil samples were collected in September 1988 from the southern portion of the site adjacent to the Fernlock Building. The samples were analysed for pH, copper and sulfate. The results are shown in table 1. The sampling locations are shown in the RECON submittal. The results indicate that surficial soils contain high concentrations of copper and sulfate. Soils adjacent to the Fernlock building indicated high acidity (low pH).

U. S. Bronze operated four underground mineral spirits storage tanks on the southern portion of the site (figure 1). The size of these tanks is unknown. During a 20 December 1988 inspection of the site, a vent from these mineral spirits tanks was located. Solvent odours were detected emanating from these vents. It is suspected that mineral spirits is beneath the ground surface and is impacting ground water.

During the aforementioned site inspection, three areas of soil staining was located on the site (figure 1). The first area is

F1

Table 1. -- Results of soil-sample analyses from U. S. Bronze, Raritan Township, Hunterdon County

Sample location	Depth interval (in)	pH	Copper (ppm)	Sulfate (ppm)
S-1	0-6	5.14	1,180	NT
S-2	0-6	6.48	75,900	NT
S-3	0-6	6.86	18,800	NT
I-2	6-12	7.41	148	66
I-1	6-12	2.99	3,070	9,460
I-1	12-18	2.38	2,200	11,780
B-1A	6-12	7.09	97	81
B-1B	40-48	4.84	644	73
B-2A	6-12	4.98	3,010	834
B-2B	40-48	6.24	129	143
B-3A	6-12	6.70	29	10
B-3B	36-42	7.23	18	13
B-4A	6-12	4.26	1,240	197
B-4B	36-42	6.17	973	273
B-5A	6-12	4.42	1,590	87
B-5B	24-30	4.29	1,450	<11
B-6A	6-12	5.63	493	46

NT, not tested

located south and southeast of the Frenlock building and is likely the result of copper sulfate. The two other surface stainings were of petroleum.

HYDROGEOLOGY

Surficial deposits beneath the U. S. Bronze site consist of red to brown silty clay with sand. The thickness of these surficial deposits range from less than one foot to over five feet. Beneath these deposits is the Triassic-age Passaic Formation which is a red to brown, highly-fractured siltstone and sandstone.

The depth to ground water is presently not known. The ground-water flow direction is also not known, however, the U. S. Bronze facility exists on top of a hill which may cause ground water to flow radially away from the site.

F-2

a. Volatile organic compounds using EPA Method 624 plus o,m,p-xylenes plus the identification and quantification of the fifteen highest non-targeted compounds.

The gas chromatograph run should be extended for 40 minutes to insure elution and detection of high molecular weight fuel-oil/mineral-spirits compounds on the ground-water sample from the worst-case well. The fifteen highest peaks on the 40 minute run should be quantified. The total number of peaks should be reported;

b. Base neutral compounds using EPA Method 625 plus the quantification and identification of the fifteen highest non-targeted compounds;

c. Petroleum hydrocarbons using EPA Method 418.1. The sample should be obtained from within two feet of the water table;

d. Priority pollutant metals plus iron and manganese;

e. Sulfate;

f. Field pH, conductivity, oxidation potential (Eh) and temperature;

g. Any oil sheens or odors should be noted.

8. The two onsite production wells should be sampled and analysed for the above parameters.

9. Monitor wells which are determined to contain free product need not be sampled at this time. It will be assumed that ground water in these wells is highly polluted. It may become necessary to sample these wells in the future to monitor remediation.

10. The pumping schedule of the two onsite production wells should be submitted. This should include static and pumping water levels.

11. Upon completion of the field investigation, a report should be prepared and submitted to NJDEP by a qualified hydrogeologist. The report must contain, at a minimum, the following information:

F3

j. Conclusions concerning ground-water flow mechanisms in the aquifer both horizontally and vertically to include actual hydraulic gradients and ground-water flow velocities; and

k. Recommendations for additional investigative work to determine the horizontal and vertical extent of ground-water pollution and/or remedial measures to eliminate sources of pollution and restore the site to background conditions in a timely fashion.

cc: Arnold Schiffman
FILE

F4

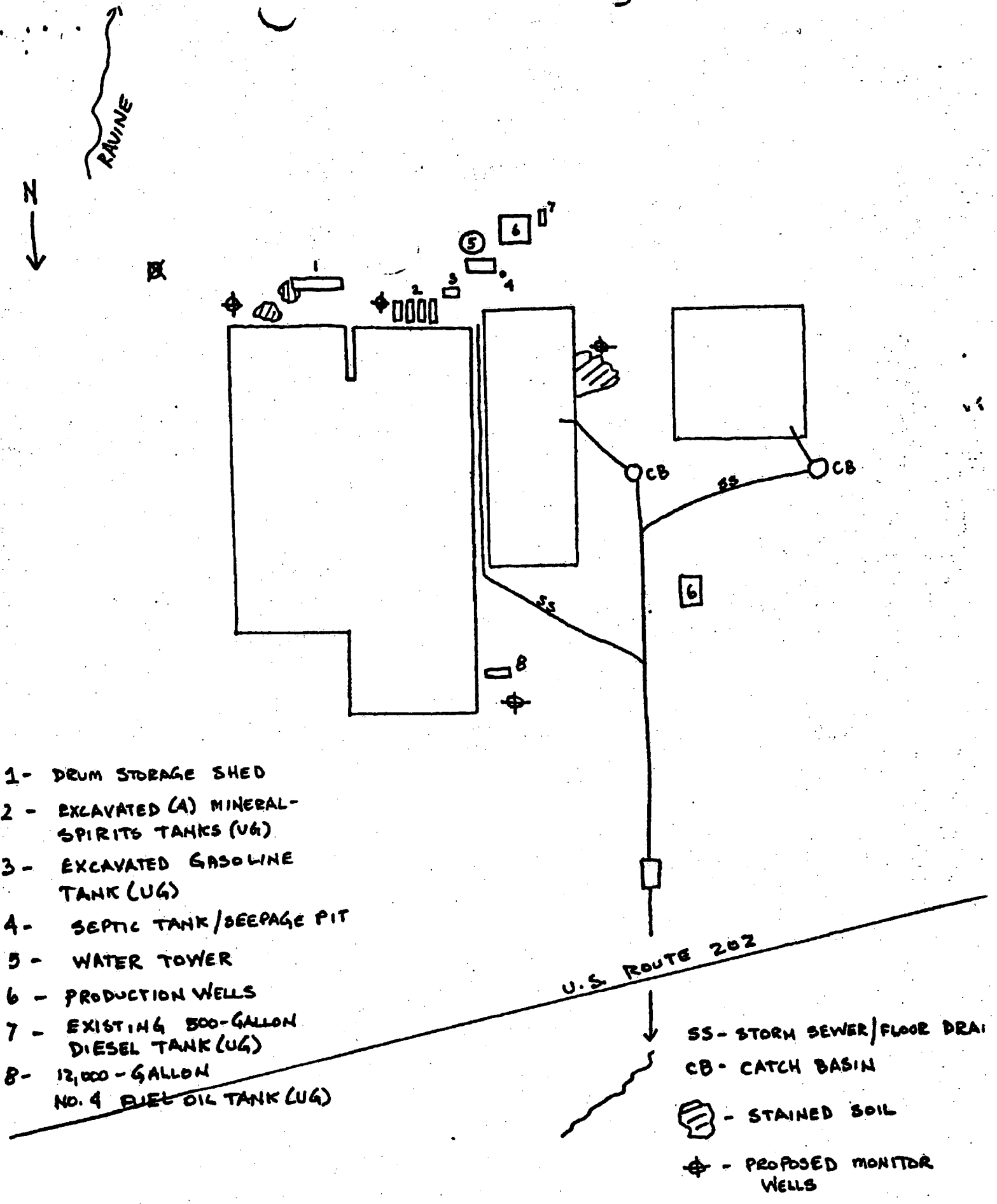


FIGURE 1. -- MAP OF U.S. BRONZE FACILITY SHOWING AREAS OF ENVIRONMENTAL CONCERN AND PROPOSED MONITOR ... FLEMINGTON, HUNTERDON COUNTY

ATTACHMENT G

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO Joseph N. DePierro

FROM Carl F. Ochs, Jr. DATE Sept. 29, 1981

SUBJECT Emergency Response to Explosion at United States Bronze Powders, Inc., Route 202, Raritan Twp., Hunterdon County -- Plant ID #80030

DATE OF INCIDENT:

September 24, 1981

PERSONS CONTACTED:

Sheldon Hoffman - Flemington Fire Chief
Bill Meyers - Plant Engineer
Wayne Pedrich - Detective Sergeant - Raritan Twp. Police

DETAILS:

At approximately 1230 hours, we received a call respond to a "chemical explosion" at the above plant. Mr. Dargay attempted to call the plant, but they would not tell us anything. Mr. Dargay and I arrived at the scene at about 1300 hours. There was no visible plume and it appeared that the incident was just about over.

There were several fire companies and rescue squads on scene along with a myriad of TV crews and news reporters.

Our first contact was with Chief Hoffman who provided us with some background details. The first explosion occurred at about 1100 hours. He was about one half mile away when he heard it and he observed a large black cloud rise from the plant and then disperse with the wind.

The explosions were caused by aluminum powder, which was being blown from a hopper truck into the aluminum atomization chamber and from there blown down to storage hoppers and packaging equipment in an adjacent building (see diagram attached).

After the explosion, there were no tremendous fires, just small scattered piles of burning aluminum particles which were extinquished with sand, etc. No water was used. Three people were seriously burned in the explosions, and several people had minor injuries.

G1

It is suspected that the cause of the explosion was static electricity but this has not been confirmed.

The chief then escorted us to the scene of the explosions where we met Bill Meyers, the Plant Engineer who took us around and explained what was going on when the explosion occurred.

The normal operation is to melt aluminum billets in one of two furnaces and air atomize the molten aluminum. The aluminum powder is then sucked through the system to multiclone collectors, product storage hoppers, and packaging equipment. (This is where the secondary explosions occurred. Blow-out panels from this equipment were scattered everywhere. Apparently, the fire flashed through the ductwork to this area of the plant from the area of the first explosion.)

When the explosion occurred, the furnaces were down but pre-atomized aluminum powder was being blown from a hopper truck into the atomization chamber and then on down to the hoppers, etc.

Mr. Meyers indicated that this is done very infrequently.

The first explosion was the strongest and this is when the three most seriously injured men were hurt. They were working right in the vicinity of where it occurred and were apparently blown right out of the building.

This main building sustained heavy damage in the blast. All the windows were blown out, metal panels were buckled, and the cinder block walls were cracked and shifted. The fire damage seemed to be confined to about a 30 foot diameter area (see diagram).

A quick thinking employee drove the truck away after the initial explosion, which probably saved it from exploding.

The secondary explosions occurred about 120 feet away in the collection buildings. The damage was not really as bad here as it looked since most were blow-out panels which had done just that. Again, the fires were small piles of burning aluminum powder which were smothered with sand.

As to any environmental hazards from this incident, there were probably very little or none. There was virtually no plume except for the clouds generated by the explosions, but they dispersed very quickly. These puffs were probably mainly aluminum dust and oxide.

Since no water was used on the fire, there was no run-off, therefore, there was no ground or water contamination.

G2

scattered aluminum powder was confined to the immediate plant area.

The equipment involved in this incident is covered by approved permits and certificates as follows:

CT-44,913 - Furnace #1
CT-44,914 - Collection Building #1
CT- 9,613 - Furnace #2
CT- 9,614 - Collection Building #2

RECOMMENDATIONS:

A 90 day follow-up by Central Field Office to check that the repair and use of equipment complies with air pollution codes and current permits.

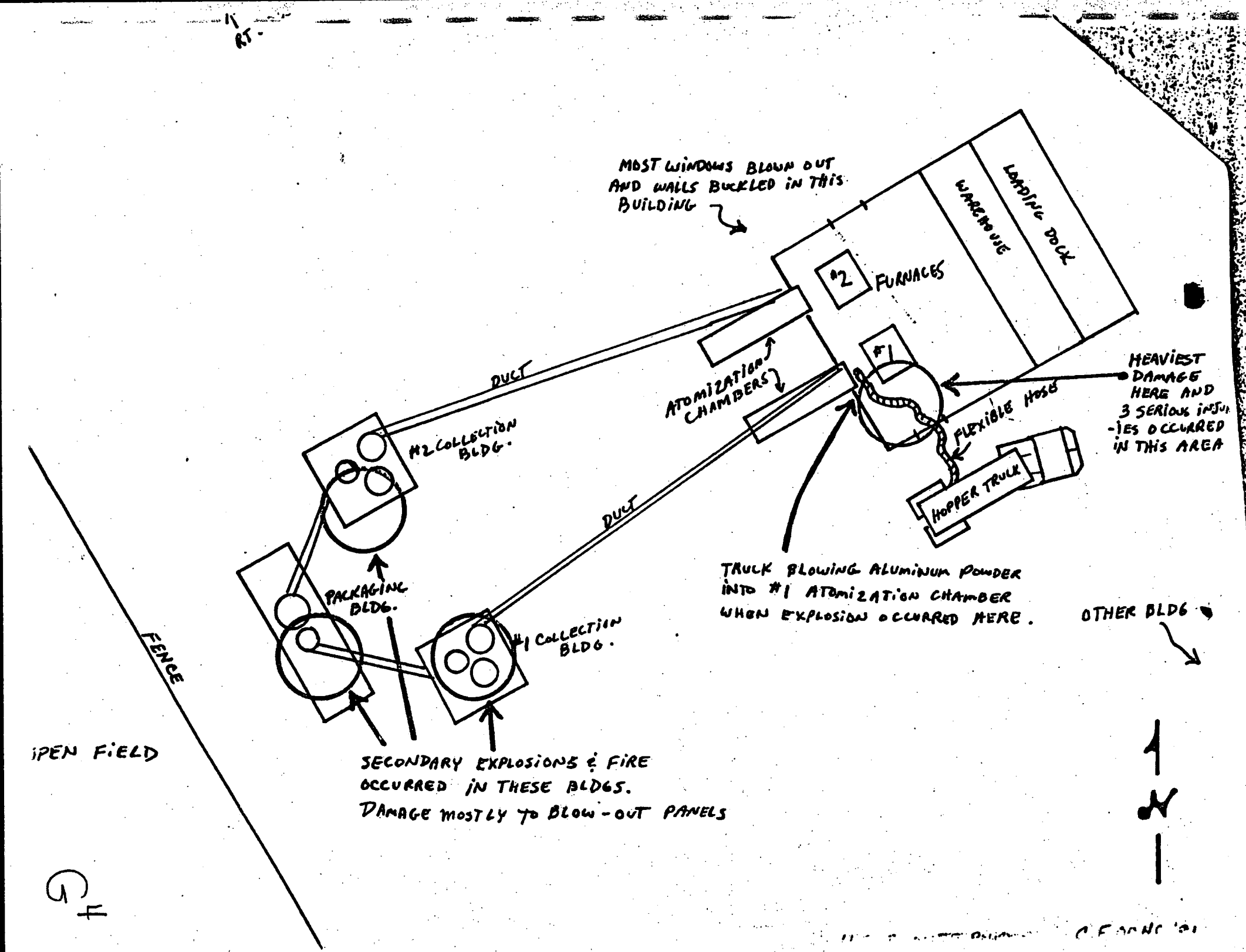
Carl F. Ochs, Jr.
Senior Environmental Specialist
Central Field Office
Bureau of Air Pollution Control

CFO:dlk

Attachment

cc: File - Miscellaneous

G3


MOST WINDOWS BLOWN OUT AND WALLS BUCKLED IN THIS BUILDING
#2 FURNACES
WAREHOUSE
LOADING DOCK
#1
HEAVIEST DAMAGE HERE AND 3 SERIOUS INJU-IES OCCURRED IN THIS AREA
ATOMIZATION CHAMBERS
DUCT
#2 COLLECTION BLDG.
FLEXIBLE HOSE
HOPPER TRUCK
DUCT
PACKAGING BLDG.
#1 COLLECTION BLDG.
TRUCK BLOWING ALUMINUM POWDER INTO #1 ATOMIZATION CHAMBER WHEN EXPLOSION OCCURRED HERE.
OTHER BLDG
FENCE
OPEN FIELD
SECONDARY EXPLOSIONS & FIRE OCCURRED IN THESE BLDGS. DAMAGE MOSTLY TO BLOW-OUT PANELS
N

7 injured as triple-blast rips Raritan plant

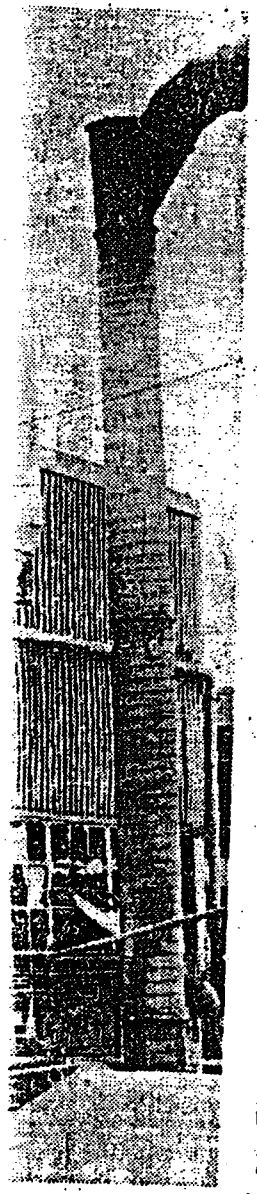


Photo by Steve Klaver

ed seven persons at
ownship

By MIKE PISERCHIA

Three powerful dust explosions ripped through an aluminum powder processing plant in Raritan Township yesterday, setting off numerous fires and injuring seven workers, three of them seriously.

The three — Aldo Alois, 57, of Kingwood, Donald Leighton of Lambertville and James Briggs, 36, of Port Murray — were flown by State Police helicopter to the burn center at St. Barnabas Medical Center in Livingston.

A hospital spokesman said all three men had second- and third-degree burns over most of their bodies.

The four other workers, including Briggs' two brothers who, police said, suffered shock, were treated and released from the Hunterdon Medical Center in Flemington.

The first two explosions occurred shortly after 11 a.m. in the aluminum atomizing plant, which manufactures powder for paint pigments, according to Neils Neilson, vice president of operations.

"This is a very hazardous operation," Neilson said. "You have to control the dust or there'll be an explosion."

He said two previous explosions rocked the plant in January 1980 and another in 1974. He said the explosions were minor in comparison to yesterday's mishap, adding that nobody had been injured in the earlier blasts. Static electricity was believed to have caused last year's explosion, Neilson said, but plant officials took "the necessary corrective action."

Officials were unable to immediately determine what caused yesterday's accident.

Raritan Township Sgt. James Clifford and Patrolman Nicholas Hamm arrived at the scene in separate squad cars moments after the first two blasts.

Amid the fire and smoke, Clifford and Hamm said, they saw two badly burned workers on different sides of the damaged building, lying on their backs with their arms and legs braced toward their bodies.

"The fire and heat burned their clothes right off," Hamm said. "Their bodies were smoldering. It was a terrible sight."

Hamm said a third burn victim, believed to be Alois, ran to a nearby employe shower to extinguish the flames from his body. Alois, a truck driver, was unloading a shipment of fine aluminum powder outside the building when it exploded, Neilson said.

While police and first aid workers were attempting to evacuate the injured employes, a third explosion rocked a nearby storage bin. Nobody was hurt in that blast.

All the injured workers were taken to nearby Hunterdon Medical Center, where the three severely burned workers were prepared for the airlift to St. Barnabas.

All of the fires were extinguished shortly before 1 p.m., said Sheldon Hoffman, Flemington fire chief.

He said combating the fire posed some problems because the plant was covered with highly flammable aluminum dust. Hoffman said water cannot be used to extinguish such a fire because the water would only spread the buring aluminum particles. Instead, the firemen just have to let the particles burn out, he added.

Firefighters also were afraid the fire would spread to nearby storage bins that would have sparked another round of explosions and fires. But they were able to prevent such an occurrence.

Police said one of the injured workers, Walter Williams, 33, of Flemington, got inside Alois's truck and drove it away from the scene of the fire. He suffered hand injuries as a result, police added.

Police identified the other injured men as: David Nearhood, 23, of Clinton Township, who was treated for burns; George Briggs, 38, and Arnold Briggs, 48, both of Trenton, who were treated for shock.

The atomized building is half-owned by U.S. Bronze Powders Inc. and is one of five buildings in the U.S. Bronze complex in Raritan Township.

ATTACHMENT H

ADM-012

MEMO NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Files THROUGH N.G. Binder, P.E., Chief, Region V, Enforcement & Regulatory Services Element

FROM John Mundras & Howard Tompkins THROUGH A. W. Valencia, Supervisor, Compliance Monitoring Unit, Region V DATE NOV 20 1981

SUBJECT U.S. Bronze Powders Facility Illegal Discharge Inspection

On October 28, 1981 the writers visited the U.S. Bronze Powders facility on Route 202 in Raritan Township regarding an illegal discharge reported to this office by Rosemary Tuccillio of the Cancer and Toxic Substances Survey Group. She indicated that on October 8, 1981 while on a visit to the U.S. Bronze Powders facility she observed a hose coming from an area of the facility identified as the ball mill which was discharging what appeared to be wastewater across the parking area and into a storm drain. The discharge which according to Ms. Tuccillio contained bronze and copper flakes, flowed over the parking area into a storm drain, then through a ditch under Route 202 and then finally via the ditch to Mill Creek. Ms. Tuccillio indicated that she observed bronze and copper flakes in the ditch and creek bed. However, the October 28, 1981 inspection of the ditch and creek bed by the writers did not reveal any such deposits. This could be attributed to the fact that the inspection by the writers was conducted about seventeen (17) days after Ms. Tuccillio's inspection and also that heavy rains had occurred in the area just hours prior to the writers inspection. Ms. Tuccillio states that in a conversation with an employee of the company the discharge occurs quite frequently and was the result of overfilling of the ball mill recirculation tank.

This was mentioned to Mr. Myers, Plant Engineer, whose comment was that the overfilling of the recirculation tank and subsequent discharge to the storm drain occurred rather infrequently. Mr. Myers was informed that this method of discharging of wastewater from the ball mill area was unacceptable and all wastewater must be directed to the oil and water separator unit.

The writers recommendations for further action in this case appear on an attached sheet.

G6
attachment
cc: Binder
Valencia
Mundras
Tompkins

H1

U.S. Bronze Powders Facility
Illegal Discharge Inspection

RECOMMENDATIONS

Based on the October 28, 1981 inspection of the U.S. Bronze Powders Facility and a review of the company's NPDES file, the writers recommend that the appropriate bureaus and agencies be contacted and informed that a treatment works approval for the oil and water separator, and a final NPDES permit be issued to this facility.

H2

ATTACHMENT I

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

INVESTIGATION MEMORANDUM

Persons Conducting Investigation
JOAN ROGAUSKAS
Michael Ferricla, USEPA
Steven Hale, USEPA

Complaint No./NJPDES No. NJ000 3336

Date of Investigation 3/31/87

Routing Malloy

File: Raritan Twp/Hunterdon Co.

Location of Incident

U.S. Bronze Powders, Inc. Rt 202 N.
Raritan Twp / Hunterdon County.

Purpose of Investigation Compliance Evaluation Inspection

Persons Interviewed Terry J Keth, Plant Engineer

Summary of Findings

During the inspection, it was observed that the flooring beneath the electrolytic copper operation (known as Fernlock by the company) has been eaten away to a depth of 1½ feet by copper sulfate in the area of the sump pumps, allowing the discharge to ground water of copper sulfate solution. Photographs were taken and are attached to this Report. The accompanying diagram illustrates the vantage points from where the photos were taken. The Blue staining is from copper sulfate solution

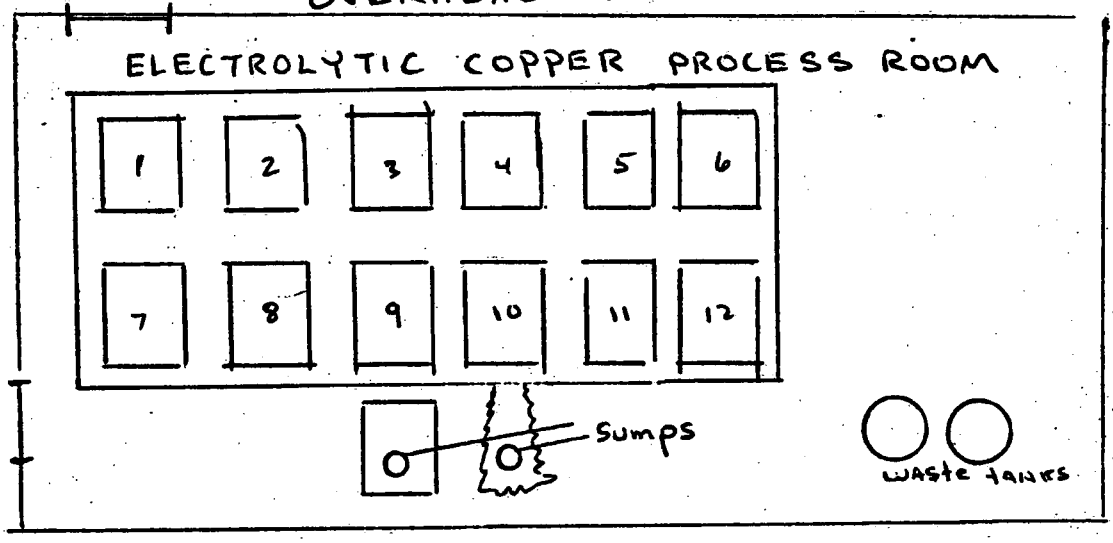
Complaintant Notified

Date: Phone: Letter:

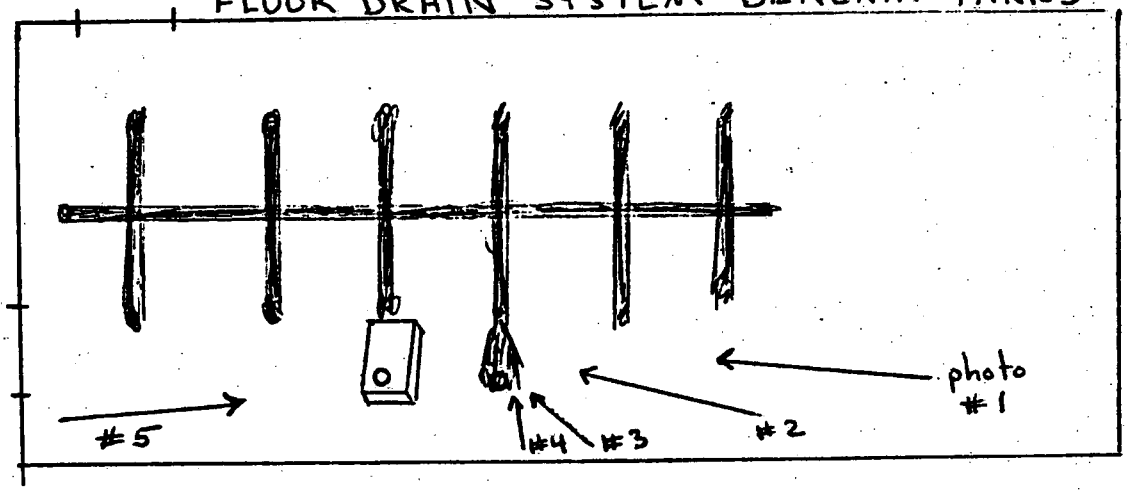
I

to Scale

OVERHEAD VIEW



FLOOR DRAIN SYSTEM BENEATH TANKS



4/4/1993 spoke to Tony Kath. Electroplating operation ate into concrete floor. Recon Systems did borings Recon 2 production water suggested check for copper. Fecal tested for.

Asked for test results and proposal ASHP

Form DEQ-023A 3/87

TD LOG # 2269

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIV. OF ENVIRONMENTAL QUALITY – BUR. OF COMMUNICATIONS AND SUPPORT SERVICES
Phone: 609-292 7172

COMMUNICATIONS CENTER NOTIFICATION REPORT

CASE NO. 88 (Yr) · 03 (Mo) · 30 (Day) · 1550 (Time)

DATE 03 (Mo) · 30 (Day) · 88 (Yr) REC'D BY CAU (Initials) REVIEWED BY Strong

INCIDENT REPORT BY:
Name Terry Kath Phone 201-782-5454
Street Rt 202
City Flemington State NJ
Affiliation/Title U.S. Bronze

INCIDENT LOCATION: ___ Transportation X Facility ___ Other
Name (Site): U.S. Bronze Phone 201-782-5454
Street Rt 202
City Flemington County Hunterdon State NJ Zip Code
Date of Incident: ___ (Mo) ___ (Day) ___ Time:

IDENTITY OF SUBSTANCE(S) SPILLED, RELEASED, ETC.: X Known ___ Suspected ___ Unknown
Name of Substance(s) (Gas, (Liquid), Solid): Copper Sulfate Solution
CAS Number: N/A
Amount Released/Spilled Unknown ___ Actual ___ Potential ___ Estimated
Substance Contained (Y)/N/U
Type of Release/Spill: ___ Terminated X Continuous ___ Intermittent
Hazardous Material (Y)/N

NATURE OF INCIDENT: ___ Complaint ___ Munic. Notification ___ Emergency X Facil. Notification

INCIDENT DESCRIPTION:
___ Fire ___ Explosion ___ Air Rel X Spill ___ MVA ___ Derailment ___ Smoke/Dust
___ Odors ___ Sewage ___ NJPDES ___ Noise ___ Illegal Dumping ___ Wildlife
___ Equip Start-up/Shutdown, Equip Fail/Upset, etc.
___ Other (specify)

Injuries (Y/(N)/U) Public Exposure (Y/(N)/U)
Facility Evacuation (Y/(N)/U) Police at Scene (Y/(N)/U)
Public Evacuation (Y/(N)/U) Firemen at Scene (Y/(N)/U)
Contamination of ___ Air X Land ___ Water Assistance Requested (Y/(N)/U)
Potable Water Source (Y/(N)/U) Wind Direction/Speed /
Receiving Water N/A Precipitation (rain/snow)
Location Type: ___ Residential X Industrial ___ Rural ___ Sensitive Population (Hosp.,School,Nurs. Home)

STATUS AT INCIDENT SCENE Material has leaked through the floor over a period of time. Company will complete cleanup

RESPONSIBLE PARTY: X Known ___ Suspected ___ Unknown
Company Name U.S. Bronze Phone 201-782-5454
Contact Terry Kath Title
Street Rt 202
City Flemington County Hunterdon State Zip Code

OFFICIALS NOTIFIED (Name/Title):

	Name	/ Title	Phone	Date/Time		
X NJSP:	Diana	/ NJSP-OEM	882-2000	3-30-88	/ 1653	(T/M)
Local Health		/			/	(T/M)
X Local Munic:	Operator #13	/ Flemington P.D.	201-782-3434	3-30-88	/ 1700	(T/M)
USEPA:		/			/	(T/M)

INCIDENT REFERRED TO:
X DEQ ___ DWR ___ DEWM ___ DHSM X DHWM ___ DOH ___ DFG ___ DPF ___ DCJ ___ DCR
Region: X Northern ___ Metro ___ Central ___ Southern X ER1 ___ ER2

	Name/Affil	/	Phone	Date/Time		
X 1.	Gary Gibbs	/ ER#1	Office	3-30-88	/ 1654	(T/M)
2.	"	/ DHWM-North		3-30-88	/	(T/M)
3.		/			/	(T/M)

IMMEDIATE DEP RESPONSE (Y/N) [Emergency (Y/N)] Enforcement (Y/N)]

COMMENTS Joan Rogauskas, DWR, discovered this incident at the facility.

COPIES: White - Lead Agency Yellow - Comm. Center Pink - A310 Goldenrod - Other

2001 TRENTON DISPATCH 609-984-6536 88 03/30 17:18

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MEMO NJDEP DHWM BFD-N

TO FILE NO.10-09-01
FROM GARY PEARSON THROUGH JOE MIRABELLA DATE 7/21/88
SUBJECT US BRONZE POWDERS, FLEMINGTON, HUNTERDON COUNTY,
DHWM88-03-30-1550N EPA ID NJD002444190

CONTACTS:
Terry Rath US Bronze Powders 782-5454
Douglas Reid-Green Recon Systems 782-5900
Robert Wolfertz Recon Systems 782-5900
Elaine Stallings DEP DWR BNRE 299-7592

BACKGROUND:
US Bronze had a plating operation which generated waste copper sulfate. Some how this waste got through the floor of the building and subsquently out of the building and into the surrounding soils. US Bronze reported this as a spill following a NJPDES Compliance Evaluation Inspection by Elaine Stallings. They retained Recon Systems to evaluate and remediate the problem.

INVESTIGATION:
A proposal was recieved on 6/27/88 detailing their plan to remove surficial soils and install two borings. They intend to clean-up to 170ppm coppper (ECRA guideline). Gary Pearson instructed them to clean-up to background. On 7/18/88 at 1510 hours Gary Pearson arrived at US Bronze on Rt. 202 north of Flemington. US Bronze makes bronze powders by ball milling copper. They use to make aluminum powders and recover copper from copper plates. In the recovery process they generated a copper sulfate solution which is what was released to the floor and soils over an indeterminate time. From Recon's report and the surface topography it appears the plume is heading towards a neighboring farm. US Bronze has a production well on site which had <0.01 mg/l copper on 5/11/87 and >0.05mg/l copper on 4/19/88.

RECOMMENDATIONS:
All contaminated soil that can be removed should be removed using background as the clean-up standard. Monitering wells should be installed and US Bronze should provide any well data they have on their production well and other wells on the property so an historical analysis of copper in the groundwater can be made.

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ATTACHMENT J

State of New Jersey

DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT

DIVISION OF WATER POLICY AND SUPPLY

Prepared by the
BUREAU OF GEOLOGY AND TOPOGRAPHY
DIVISION OF RESOURCE DEVELOPMENT

SPECIAL REPORT No. 24

GEOLOGY AND GROUND WATER RESOURCES OF HUNTERDON COUNTY, N. J.

1966

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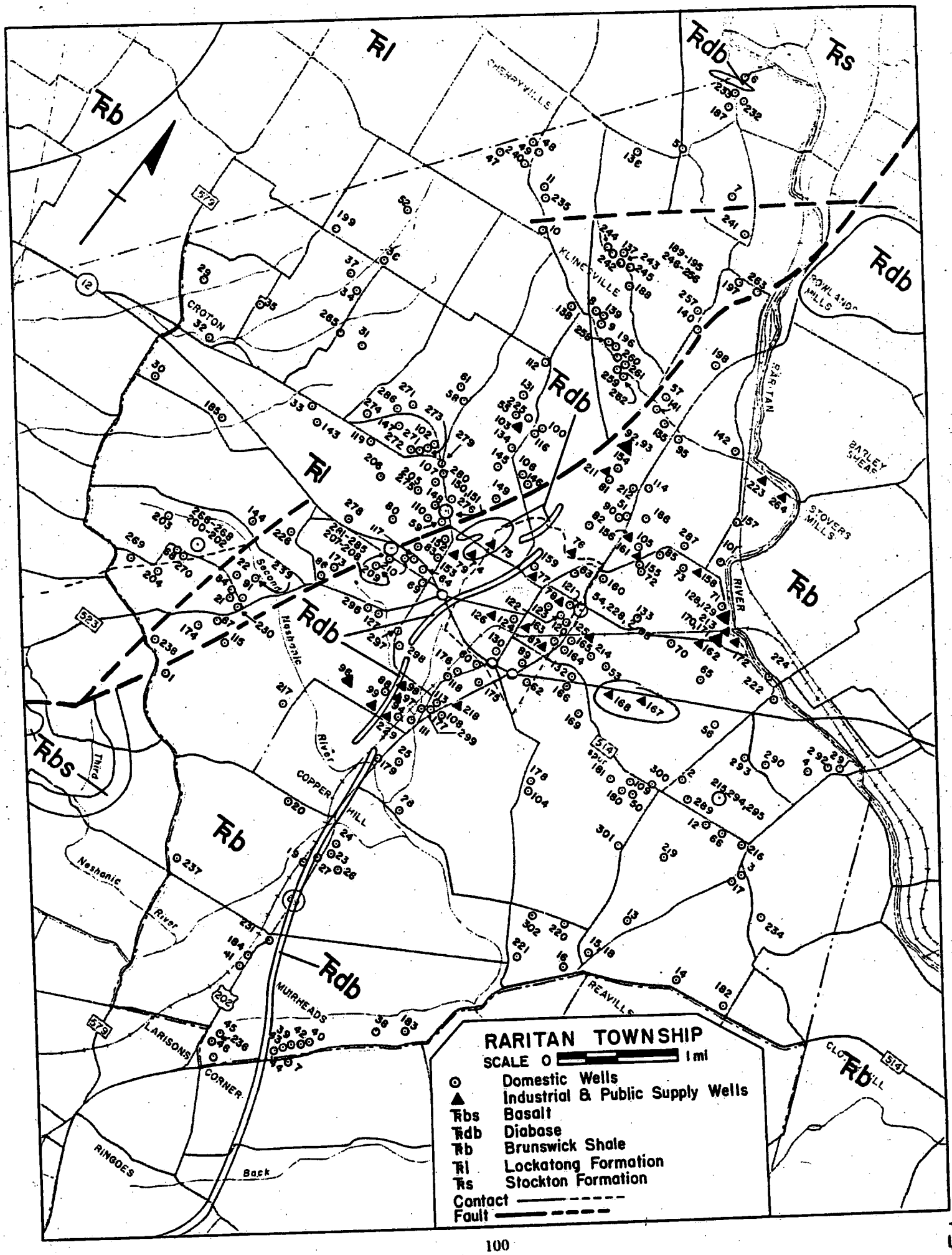
RARITAN TOWNSHIP
SCALE 0 1 mi
Domestic Wells
Industrial & Public Supply Wells
Trbs Basalt
Trdb Diabase
Trb Brunswick Shale
Trl Lockatong Formation
Trs Stockton Formation
Contact
Fault
Trl
Trb
Trdb
Trs
Trbs
CHERRYVILLE
KLINESVILLE
CROTON
RARITAN
RIVER
STOVERS MILLS
BATLEY SHEAR
COPPER HILL
Neshanic River
Third
Second
MUIRHEADS
REAVILLS
LARISONS CORNER
RINGOES
Back
572
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514
579
202
12

and joints which are usually widely spaced and relatively tight. Occasionally a fault, which is usually associated with highly fractured rock, is encountered and an excellent well results. Most ground water occurs under water-table conditions.

The argillite of the Lockatong Formation has very little ability to store or transmit water, partially because of the small number and tightness of fractures but also because of the way in which it weathers and the influence of topography. The Lockatong weathers to a dense yellowish-brown clayey soil which fills the upper fractures and joints thereby impeding infiltration of precipitation. To a lesser extent, recharge is also inhibited by the generally higher elevations of the argillite on ridges, which coupled with the clay soil, cause more abundant and more rapid runoff than in areas underlain by other formations.

Reported yields from 186 domestic wells range from ½ to 78 gpm with an average of 12 gpm. At first it would seem that one should have no trouble obtaining a well in the Lockatong. However, driller's records show that over a half of the wells (52%) yield 7 gpm or less and 72 (38%) yield 5 gpm or less. Specific capacities of 63 domestic wells range from .004 to 4.00 gpm per foot of drawdown and average .37 gpm per foot. In contrast only 9% of the wells penetrating the Stockton Formation and 5% of the wells in the Brunswick Shale were reported to yield less than 5 gpm. Many drillers do not pump a domestic well, especially a bad one, long enough to give it an adequate test. Judging from some of the drawdowns on wells pumped only 1 or 2 hours, the number of poor wells is undoubtedly much higher, even though the driller has reported a yield of 5 gallons per minute or more.

Because of the small storage capacity of the interconnecting fractures, closely spaced wells on the same fracture system can be expected to have mutual interference. Over the years this Bureau has seen many instances of new wells diverting water from a nearby well. Widmer (1963) describes an extreme case of one homeowner with a very satisfactory well (10 gpm), 116 feet deep in argillite: "Some 12 years after his home was built, a new home was erected on the lot next door. The lots in this area were approximately one acre in size. The new neighbor did not get water until his well reached 628 feet at which time he secured 10 gpm and the original older well immediately went dry."

Only 5 industrial wells have been completed in the Lockatong Formation. These yielded between 8 and 100 gpm with an average of 63 gpm and a median of 70 gpm. Three of the better wells are owned by the same company and are in the same area which is evidently more fractured than usual.

Ground water from the Lockatong Formation is frequently moderately hard, but otherwise of good quality (see Chapter V).

BRUNSWICK SHALE

Geology

About 172 square miles, or 37% of the total land area of Hunterdon County, is underlain by the Brunswick Shale, a larger area of Hunterdon County than any other geologic unit. The Brunswick Shale also underlies the most densely populated areas of the county and therefore most of the wells have been completed in this formation.

Brunswick Shale crops out in two areas of Hunterdon County. The southern belt extends northeast from Lambertville in an ever-widening belt until it crosses into Somerset County. East of Neshanic this belt of Brunswick Shale joins one which extends northeastward from Hopewell Township, Mercer County and continues into New York State. The western boundary of the southern Brunswick Shale belt in Hunterdon County is formed by the Flemington Fault. The second belt trends northeast from the Delaware River in Kingwood Township and then swings north and northwest, parallel to the northern outcrop of the Lockatong Formation, until it interfingers with sandstone beds of the border conglomerates in northern Alexandria and Holland Townships.

The Brunswick Shale normally is a red argillaceous shale with local beds of fine-grained red sandstone, siltstone and black, gray or greenish shale. As mentioned previously, the Lockatong interfingers with the Brunswick Shale. In the lower part of the Brunswick section one often finds beds of argillite, siltstone or hard gray shale more characteristic of the Lockatong than the Brunswick.

McLaughlin (Willard and others, 1959) has mapped these bands as a Lockatong facies interfingering with the Brunswick Shale while Drake (1961) preferred to map this type of unit as a member of the Brunswick Shale. It is not the purpose of this report to resolve this problem. However, regardless of what we call these units, it should be understood that they do exist and should be mapped before the ground water potential of the local areas underlain by this kind of lithology can be estimated. Several days were spent in Kingwood Township and six bands of Lockatong lithology were traced for a short distance and are shown as "Trba" on the Hunterdon County Geologic Map (Plate II). Because of limited time, no attempt was made to establish contacts but only to show that it is possible to map these units which are lithologically and hydrologically similar to the Lockatong Formation. In Hunterdon County the upper Brunswick Shale either grades into and interfingers with the border conglomerates or is cut off by one of the Triassic faults.

No fossils have been reported from either the Stockton or the Lockatong Formations but a few, though rare, have been described from the Brunswick Shale. These are mainly reptile footprints, plant remains or impressions of various vertebrate

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parts, especially from fish. Ripple marks, rain drop impressions and mud cracks are occasionally found and indicate a continental environment of deposition.

The Brunswick Shale has been intruded by several large, and a great many small, diabase dikes and sills. Although both the Lockatong and Stockton Formations have also been intruded by diabase, neither one has been intruded to the extent of the Brunswick Shale in Hunterdon County. Adjacent to intrusive bodies the shale has been baked and altered to a hornfels for a distance from a few feet up to several hundred feet. The dark gray hornfels is very hard and resembles argillite in both appearance and the availability of ground water.

The Brunswick Shale, which has been estimated to be from 6,000 to 9,000 feet thick, is the least resistant to the forces of erosion of the Triassic Formations. Areas underlain by it are characterized by a gently rolling topography except where traprock (diabase or basalt) is present or it is interbedded with argillite. Low ridges are formed by argillite beds within the area mapped as Brunswick Shale and more prominent ridges are formed by traprock. Many streams and ridges approximately parallel the strike of the Brunswick Shale beds, but it is not as conspicuous a feature as in the case of the Lockatong Formation because many streams have also eroded at an angle to the strike along the numerous and easily weathered joints in the shale.

Hydrology

For all practical purposes a piece of shale is as non-porous as a piece of argillite. However, the Brunswick Shale is highly fractured and has many closely spaced joints so that as a whole it has a relatively high secondary permeability for a non-porous rock. Those areas which have been faulted (many small faults are not shown on the map) or where the joints and fractures have been enlarged by circulating ground water, will contain better than average wells. Also, wells in areas where several feet of sand and gravel overlie the shale are likely to be better than average since this material acts like a sponge and allows water, which would have otherwise been lost through surface runoff, to slowly recharge the underlying rock.

Ground water flows through the Brunswick Shale both in nearly vertical fractures and joints and also along nearly horizontal fractures along bedding planes. Bedding planes are most open in the weathered zone, which usually occurs to depths up to 300 feet. Below the weathered zone permeability is almost entirely dependent upon the steeply dipping fractures which become tighter with increasing depth. However, the upper part of the weathered zone, though more fractured than the deeper strata may be less permeable due to the clogging of fractures by clayey residual material derived from the weathered shale.

Most domestic wells tapping the Brunswick Shale derive water from fractures below the water table and are under water table conditions. However, shale residuum frequently clogs so many of the fractures in the upper zone that ground water in the lower weathered zone occurs under semi-artesian conditions due to differences in vertical permeability. Deep wells (250-600 feet) usually encounter water under semi-artesian conditions. These wells generally intersect beds of altered shale, sandstone or siltstone within the shale which are well fractured and more permeable than the overlying and underlying shale. Wells greater than 600 feet deep are not likely to find much additional water. In fact, it is probable that many of the very deep wells (over 600 feet deep) obtain most of the water from above 500 feet and that very little water was encountered below this depth. Experience has shown that deep wells (300 to 600 feet) should be anticipated in the Brunswick Shale when large quantities of water are desired since both water-table aquifers and deeper semi-artesian aquifers may be utilized.

Most ground water storage is in the upper weathered zone (0-300 feet) with very little storage in the semi-artesian aquifers. Ground water storage (specific yield) for the Brunswick Shale has been estimated at from 1 to 2 percent of the volume of saturated rock in the upper 300 feet (Herpers and Barksdale, 1951). Storage would be less at greater depths and for baked shale and those bands which are similar in lithology to the Lockatong Formation.

Wells tapping the Brunswick Shale typically have high initial yields which tend to decline as the fractures around the well are dewatered. Semi-artesian aquifers also tend to lose pressure with pumping until equilibrium is reached between the semi-artesian aquifer and the water-table aquifer which is recharging it. Therefore, ultimate yields of wells in the Brunswick are usually considerably lower than initial yields. This must be taken into account when one examines old well records. All yield figures used in this report are as of the day the initial test on the well was completed and there may be a considerable discrepancy between what the wells yield today and what they originally produced. This is especially true in housing developments where homes are closely spaced and dependent upon individual wells.

Shale areas overlain by several feet of sand and gravel or adjacent to perennial streams or other permanent surface water bodies will tend to give higher yields (see Figure 8). However, because of the low storage values of the shale, large withdrawals during times of low precipitation in areas not in hydraulic continuity with surface water will usually result in the decline of water levels.

In general, the Brunswick Shale is a reliable source of water for most domestic and industrial (including public supply) uses. Reported yields from 528 domestic wells in Hunterdon County range from 0 to 100 gpm and average 19 gpm. Over half of the wells yield 15 gpm or more. Specific

capacities of 272 domestic wells tapping the Brunswick Shale range from 0 to 30.3 gpm per foot of drawdown and average 1.41 gpm per foot. The well with a specific capacity of 30.3 is in hydraulic continuity with the South Branch of the Raritan River. Only 26 (5%) of the domestic wells in the Brunswick Shale yield less than 5 gpm.

Many of these low-yield wells are probably in bands similar to the Lockatong Formation. In the small area in Kingwood Township where bands similar to the Lockatong Formation were mapped (Trba) it was found that 15 out of 32 wells (47%) yielded 5 gpm or less on initial pump tests. In baked shale areas adjacent to diabase intrusives 30 (47%) of the 64 wells tabulated were reported to yield 5 gpm or less on the initial pump test. Specific capacities of 18 wells tapping baked Brunswick Shale ranged from .01 to 2.73 gpm per foot and averaged .45 gpm per foot. As with the Lockatong Formation the high drawdowns after a few hours of pumping indicate that some of the wells in baked shale or the bands in the shale similar to the Lockatong Formation which were reported to yield 5 to 10 gpm probably would yield less with an adequate pump test.

The worst area for baked shale is in West Amwell Township on either side of the diabase ridge which extends northeast from the Delaware River south of Lambertville and becomes the crest of Sourland Mountain. Several dikes have been mapped in this area and several more are probably present near the ground surface. It is possible that some of the material which has been called baked shale actually is argillite, but whatever the true rock type, it is a poor aquifer.

Industrial and public supply wells in the Brunswick Shale yield 15 to 765 gpm and average 281 gpm. One-half the wells yield 246 gpm or more. Only 10 industrial wells (20%) out of 48 yield less than 100 gpm and only 2 wells (4%) yield less than 50 gpm. As with the domestic wells, many of the poorer wells may be in unmapped zones of argillite or baked shale.

Specific capacities of 27 Brunswick Shale industrial and public supply wells ranged from .45 to 95.5 gpm per foot of drawdown and averaged 11.4 gpm per foot. Sixteen wells are near a perennial surface water body and 11 are not. The average specific capacity of wells away from perennial surface water is 2.46 gpm per foot; the average specific capacity of wells near perennial surface water, excluding the well with a specific capacity of 95.5, is 12.4 — 5 times better (see Figure 8). As with the Precambrian wells, the reasons that the specific capacity of a well near a perennial surface water body is greater than it would be otherwise are: (1) Water in excess of natural recharge may be induced from the surface water body; (2) The rock is usually more deeply weathered in stream valleys; and (3) There is usually more unconsolidated permeable material in the stream valleys which tends to have higher storage capacities than the underlying shale.

Water from the Brunswick Shale is generally alkaline and frequently hard, the hardness generally increasing with depth. Iron concentrations, especially near diabase intrusions, are occasionally high enough to require iron removal (see Chapter V).

BORDER CONGLOMERATES

Geology

Along the northwest border of the Triassic basin adjoining the Highlands, any of the formations of the Newark Group (Stockton, Lockatong and Brunswick) may grade into beds of conglomerate. These conglomerate beds were deposited by heavily loaded high velocity streams which originated in the Highlands and emptied into the slowly subsiding Triassic basin. The conglomerates, therefore, were deposited in a series of alluvial fans contemporaneously with the Newark Group and are a facies of the Group. About 30 square miles or 6.5% of the total area of Hunterdon County is underlain by the Border Conglomerates.

Two types of border conglomerate are common in Hunterdon County. One type consists of well rounded quartzite and hard sandstone pebbles and boulders up to 2 feet in diameter. The other type is composed primarily of limestone fragments. Quartzite conglomerate is the predominant type in the northwestern part of the outcrop area (Holland, Alexandria, Union and western Clinton Townships) while limestone conglomerate predominates northeast of Lebanon. However, quartzite and limestone pebbles can be found in either area. For example, the easternmost conglomerate in Tewksbury Township is mainly limestone conglomerate toward the south and quartzite conglomerate toward the north. The border conglomerates attain their maximum thickness adjacent to the Border Fault.

Topography on the border conglomerates is similar to that of the Stockton Formation except in areas where there is a great thickness of quartzite conglomerate. Here the conglomerate may form higher hills like Gravel Hill northwest of Milford and the hill southwest of Pottersville. However, the conglomerates are commonly deeply weathered, especially near the northern border, and usually do not crop out. Where they intertongue with the Brunswick Shale a rolling topography is formed, the shale occupying the lower areas.

No estimates of the maximum thickness of the conglomerates have been made. McLaughlin (Willard and others, 1959) measured the section along the Delaware River northwest of Milford and found 1,500 feet of interbedded conglomerate and red sandstone. Due to faulting the true thickness of this section may be less than 1,000 feet.

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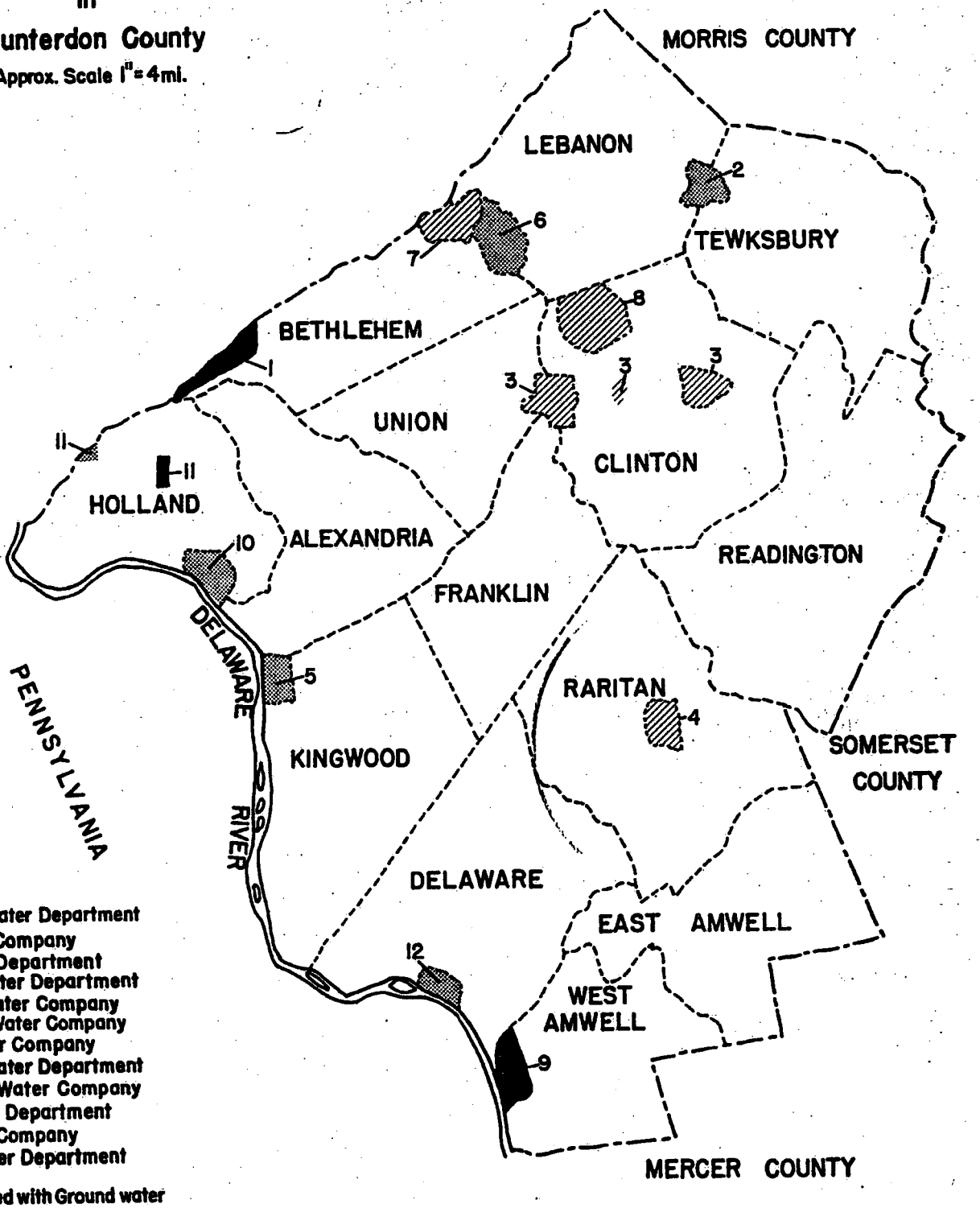
RARITAN TOWNSHIP and FLEMINGTON (Continued)

Well Number	*Casing Diam. (Inches)*	*GPM*	*Well Depth (Feet)*	*Fm.*[1]	*Casing Length (Feet)*	*Static Water Level (Feet)*	*Owner*	*Year Drilled*	*Use*[2]	*Water Level/ Hours Pumped*
164	6	30	141	Trb	25	65	Preston Case	'57		90/6
165	6	27	103	"	26	38	L. Taylor	"		40/6
166	6	35	125	"	26	25	Dr. C. Schenholm	"		42/6
167	10	103	280	"	30	33	U.S. Bronze Powder Works Inc.	"	I	110/6
168	10	411	480	"	30	35	"	'56	I	162/9
169	6	60	110	"	26	27	C. Alles	'57		65/6
170	10	530	412	"	31	17	Cary Chemical Co. No. 1	'56	I	130/12
171	10	703	519	"	29	16	" No. 2	'57	I	71/9
172	10	430	502	"	33	19	" No. 3	'59	I	34/12
173	6	50	122	"	25	30	Hewitt & Danese, Inc.	'58		60/4
174	6	1	171	Trl	22	12	R. Curtis	'55		..
175	6	30	122	Trb	26	12	C. Schenholm	'56		21/6
176	6	30	137	"	32	36	J. Gray	"		75/6
177	6	30	110	"	25	8	Sinclair Refining Co.	'57		45/6
178	6	15	150	"	21	87	A. Bogdan	'55		107/8
179	6	16	106	Trb (p) & Trdb	30	30	F. Lautner	"		50/5
180	6	10	145	Trb	21	50	Urbach & Urbach	'60		100/4
181	6	25	126	"	20	50	"	"		80/4
182	6	20	174	"	24	120	J. Case	'57		162/6
183	6	4	207	"	22	120	G. Ringer	'54		..
184	8	40	170	"	32	47	A. Lewis	'56		90/6
185	6	4	275	Trl	21	30	A. Baldwin	'59		200/8
186	6	20	203	Trb	22	10	Flemington Fair Grounds	'38		84/—
187	6	10	155	Trs	22	35	Helen DeRochmount	'61		110/8
188	6	9	80	Trs	19	10	T. Kania	'61		75/7
189	6	25	123	"	..	..	Reimer Const. Co.	'62		100/4
190	6	8	203	"	32	30	"	'61		160/4
191	6	15	124	"	30	30	"	"		80/4
192	6	4	200	"	26	70	K. Darby	"		160/4
193	6	25	122	"	24	30	Reimer Const Co.	"		100/4
194	6	20	98	"	22	20	"	"		80/4
195	6	20	123	"	26	40	"	"		100/4
196	6	12	230	"	25	70	Mrs. J. Hoffman No. 2	"		180/4
197	6	21	145	"	24	30	H. Hartwick	"		100/4
198	6	2	158	Trb	36	15	S. Seals	"		157/8
199	6	5	165	Trl	20	20	P. Hasiuk	"		140/4
200	6	6	123	"	21	30	Urbach & Urbach	"		100/4
201	6	8	104	"	23	25	"	"		80/4
202	6	7	123	"	20	30	"	'62		100/4
203	6	4	247	"	22	20	R. Sollner No. 2	'61		200/4
204	6	30	100	Trs	24	20	Urbach & Urbach	"		80/4

Figure 6

Water Company and Water Department Service Areas in Hunterdon County

Approx. Scale 1"= 4mi.



1 Bloomsbury Water Department
2 Califon Water Company
3 Clinton Water Department
4 Flemington Water Department
5 Frenchtown Water Company
6 Glen Gardner Water Company
7 Junction Water Company
8 High Bridge Water Department
9 Lambertville Water Company
10 Milford Water Department
11 Ridge Water Company
12 Stockton Water Department

Area Supplied with Ground water

Area Supplied with Surface water

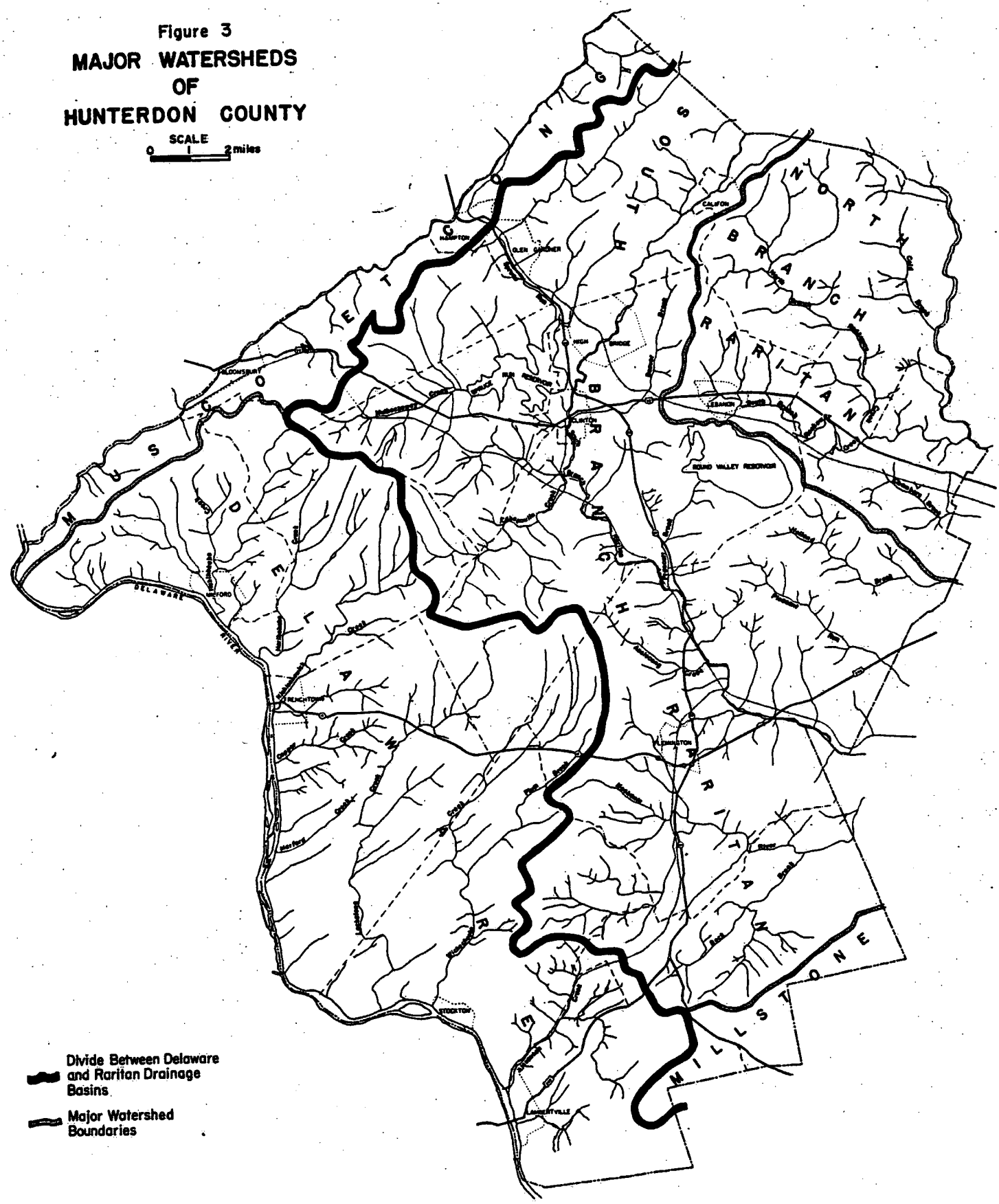
Area Supplied with both Ground and Surface water

J7

Figure 3

MAJOR WATERSHEDS OF HUNTERDON COUNTY

SCALE
0 1 2 miles



Divide Between Delaware and Raritan Drainage Basins

Major Watershed Boundaries

J8

ATTACHMENT K

United States Bronze Powders, Inc.
P.O. Box 31, Rte. 202, Flemington, N.J. 08822-0031
Telephone: (201) 782-5454 and (212) 947-7250
Telex: 83-3488 Cable: Hesperus

AUG 5 19..

August 2, 1988

AUG 5 1988

Mr. Gary Pearson
N.J. Department of Environmental Protection
Division of Hazardous Waste Management
1259 Route 46, Bldg. #2
Parsippany, NJ 07054

Dear Mr. Pearson:

We would like to thank you for the opportunity to have met with you on July 22, 1988, to discuss the project at our Flemington facility. Per this meeting, we are providing you with the following requested information:

1. The depth of Well 1 is 500 feet, and Well 2 is 500 feet. The pump depth of Well 1 is 200 feet, and Well 2 is 160 feet.

2. The farm adjacent to U. S. Bronze is not in operation.

3. The results of well water testing for copper are:

	Well #1	Well #2	Detection Limit
1986	< 0.01 mg/l	< 0.01 mg/l	0.01 mg/l
1987	< 0.05 mg/l	< 0.05 mg/l	0.05 mg/l
1988	0.008 mg/l	0.013 mg/l	0.006 mg/l

If you need any additional information, feel free to contact me.

Very truly yours,

UNITED STATES BRONZE POWDERS, INC.

Terry J. Keth

Terry J. Keth
Plant Engineer

TJK:cap

K

ATTACHMENT L

RECON SYSTEMS INC.
ROUTE 202N, P.O. BOX 460, THREE BRIDGES, N.J. 08887-0460
201-782-5900 FAX 201-782-0072
NEW ENGLAND 508-752-4217 PENNSYLVANIA 215-433-5511 CONNECTICUT 203-293-1212

IMPLEMENTATION OF LINE TREATMENT FOR IMMOBILIZATION OF COPPER SULFATE AND RESULTS OF GROUNDWATER ANALYSIS

prepared for

U.S. Bronze
Route 202 North
Flemington, New Jersey

prepared by

J. Douglas Reid-Green
Senior Hydrogeologist

RECON SYSTEMS, INC.
Route 202 North, P.O. Box 460
Three Bridges, New Jersey

RECON Project No. 1524

December 7, 1989

RECON SYSTEMS, INC.

Route 202 North, P.O. Box 460
Three Bridges, N.J. 08887
201-782-5900

New England 617-752-4217 Pennsylvania 215-433-5511

TABLE OF CONTENTS

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1.0 INTRODUCTION AND SUMMARY

The soil remediation and groundwater investigation work outlined in RECON SYSTEMS's INC. (RECON) letter of June 12, 1989 to Mr. Gary Pearson, New Jersey Department of Environmental Protection (NJDEP), has been initiated. Three (3) soil samples were collected down slope from the "Fernlock" room to act as control samples. A lime injection trench was installed inside the "Fernlock" building and four trenches were dug outside the building (see Figure 1). Twenty five hundred (2500) pounds of lime slurry was added to the trenches. Four (4) monitor wells have been installed and sampled.

Results of the analysis on the Control Samples confirmed the elevated levels of sulfates and copper found in earlier sampling. Resampling of the stream showed non-detectable levels of copper. Water samples from a well located near the previous location of underground mineral spirit tanks (MW-2) contained elevated levels of total petroleum hydrocarbons (PHCs), total volatile organic compounds (VOCs) and total base neutrals (BNs). Water samples from a well located south of the main building (MW-3) showed elevated levels of total volatile organic compound and base neutrals.

Given the three (3) month period that has passed since the initial lime was applied, confirmation samples will be recovered from the same locations as the control samples. The samples will be analyzed for copper using the Extraction Procedure Toxicity (E P Tox) method. Quarterly analysis of stream samples will begin January, 1990.

RECON also recommends resampling the four monitor wells for PHCs, BNs (EPA method 625 +15) and VOCs (EPA method 624 +15) and an investigation into the extent of the material found in the perched water at approximately eight (8) feet.

2.0 IMPLEMENTATION OF LIME TREATMENT

2.1 Recovery of Control Samples

Three (3) borings (CS-1, CS-2 and CS-3) were advanced to refusal. The six (6) inch above the shale was recovered for analysis. CS-1 and CS-2 were advanced to a depth of 18" and CS-3 was advanced to a depth of 6". The borings were evenly spaced (see Figure 1) between the "Fernlock" building and the control trench. Locations were selected to fall along the main axis of the copper-sulfate plume. Total copper, E P Tox copper, Total sulfates, pH and volatile organics (via EPA method 8240) were run on the samples.

2.2 Construction and Use of Lime Slurry Injection Trench System

On July 11 and 12 ,1989 a trench five (5) feet wide sixty (60) feet long and four (4) feet deep was dug beneath the floor of the "Fernlock" building (see Figure 1). The bottom of the trench was lined with two layers of 6 mil plastic sheeting. A four (4) inch perforated PVC pipe was laid with a slope of 1': 60'. Stand pipes were constructed at each end of the pipe to act as fill and vent lines. Crushed stone was placed around the pipe to a depth of one (1) foot. Plastic sheeting and geofabric was then laid over the stone to prevent infiltration of fines. Excavated soil was then graded over the trench leaving only the two stand pipes visible. Directly out side the "Fernlock" building three injection trenches were proposed. Due to the presence of several abandoned under ground sewer lines the configuration of the trenches had to be altered. A 2.5 feet to 3 feet deep trench was constructed in a oval around the perimeter of the area. Eight hundred (800) pounds of lime was added to this area before it was regraded.

Down slope from the "Fernlock" building three injection trenches were constructed. Each trench was approximately two (2) feet wide by 50' long. The depth varied from 2.5 feet near the top of the hill to one (1) foot near the collection trench. This variation was due to the decreasing thickness of the soil down slope. The bottom of the trenches were lined with plastic to reduce the vertical conductivity and enhance the horizontal spread of the lime. A total of six hundred fifty (650) pounds of lime was slurred and then pumped to the trenches.

In order to contain any over filling of the trenches a crescent shaped collection trench was constructed below the last injection trench. A one (1) foot high berm was built down gradient from the trench to add to the collective capacity of the trench. The trench was filled with stone to maintain the shape of the trench.

3.0 STREAM SAMPLES

On August 4, 1989, two (2) samples of the stream flowing down gradient of U.S. Bronze property were collected. Sample SS-1 was collected upstream of U.S. Bronze and SS-2 was collected downstream. These samples were analyzed for calcium, sulfates, pH, and total copper.

4.0 MONITOR WELLS

4.1 Location and Construction of Monitor Wells

After discussions with Gary Pearson and Gil Oudijk of the NJDEP, U.S. Bronze agreed to drill four (4) monitor wells (MW-1, MW-2, MW-3 and MW-4) to the first water in the rock. MW-1 was located east of the "Fernlock" building. MW-2 was located near the location of underground mineral spirit tanks which had been removed several years ago. MW-3 was located to the south of the main building near stained soil. MW-4 was located near an underground fuel oil tank.

Each well was drilled in compliance with the state specifications for a consolidated "rock" well. Twenty-three (23) feet of six (6) inch surface casing was cemented into place. The cement was allowed to set for twenty four (24) hours prior to advancing the well to first water. Drilling was advanced in five (5) foot intervals to check for the presence of water. Upon reaching first water the drilling ceased. Well construction logs are provided in Appendix 1. Upon completion of the wells each well was developed until the water was clear.

4.2 Monitor Well Sampling

After development the wells were allowed to reach equilibrium for two (2) weeks prior to sampling. On August 4, 1989 each well was purged and samples recovered. The samples were analyzed for total PHCs, sulfates, priority pollutant metals plus iron and manganese, VOCs (via EPA method 624 +15) and BNs (via EPA method 625+15). Temperature and pH were determined in the field.

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5.0 RESULTS OF SAMPLING

5.1 Control Samples

Control samples (CS-1, CS-2 and CS-3) confirmed the finding of previous sampling. Elevated levels of total copper were found in all three (3) samples although CS-3 contained an order of magnitude less copper than CS-1 which is near the source. These samples also contained anomalous levels of sulfates and pH. The E P Tox copper levels were low.

5.2 Stream Samples

No detectable levels of copper were found in the water. Sulfate and calcium did not vary from the upstream to down stream samples and showed no evidence of impact from U.S. Bronze.

5.3 Monitor Well Samples

The samples recovered from MW-1 and MW-4 showed no concentrations for the parameters analyzed that were above NJDEP action levels (see Table 1). Priority pollutant metals plus iron and manganese analysis of the water from MW-2 and MW-3 showed no concentrations above state action levels. The sulfate levels were below drinking water standards in all the wells and there were no anomalous values for pH.

MW-3 contained slightly elevated levels of total VOCs, 0.019 mg/l as compared with the state action level of 0.010 mg/l. MW-3 also contained slightly elevated levels of total BNs, 0.083 mg/l as compared with 0.050 mg/l action level. MW-2 contained elevated levels of total PHCs (43.8 mg/l), VOCs (1.83 mg/l) and BNs (0.647mg/l).

6.0 ADDITIONAL WORK TO COMPLETE LIME PROJECT

Three (3) confirmation samples will be collected in approximately the same location as the Control Samples. They will be analyzed for E P Tox copper, total sulfates and pH. Quarterly sampling of the stream will begin in January, 1990. These samples will be analyzed for total copper, total sulfate, calcium and pH. Three (3) additional samples will be collected, one (1) per quarter from the monitor wells to confirm that the "rock" water has not been adversely affected by the copper sulfate or the lime. These samples will be analyzed for total copper, pH, and sulfates.

1524.ILT 12.7.89

7.0 VOLATILE ORGANICS FOUND IN THE SOIL DURING DRILLING AND EXCAVATION

During drilling of MW-1, MW-2 and MW-3 an HNU photoionizing detector, used for monitoring ambient air conditions as part of the health and safety plan (see Appendix 2), detected elevated levels of volatile(s) in the air. A slight odor and reading of 0-5 HNU units above background were detected in the first four (4) feet of MW-1. MW-3 showed similar readings. During drilling of the first eight (8) feet of MW-2, HNU readings ranged from 30-540 above background. Readings as high as 60 were detected to a depth of eight (8) feet. MW-2 was drilled in the area where underground mineral spirit storage tanks had been excavated and removed several year ago. These tanks are the likely source of the materials in the soils.

Mr. Gary Pierson of the NJDEP was present when a volatile substance similar to mineral spirits was encountered on a perch water lens during excavation of the lime injection trench inside the "Fernlock" building. A sample of the water was collected (TS-1) and analyzed for VOCs via method 601/602. The water contained low levels of 1,1,1-trichloroethane, xylenes and ethylbenzene. The aromatic compounds are common components of mineral spirits. The three chemical groups are the same as those found in the "rock" water.

8.0 CONCLUSION AND RECOMMENDATIONS

Sufficient lime has been applied in the subject areas to theoretically reduce the mobility of the copper. Verification of the effectiveness of the process should be determined upon analysis of the confirmation samples.

No evidence has been found that the discharge from the "Fernlock" building adversely effected either the "rock" water or the stream. Levels of copper are below the drinking water standards of 1 mg/l in the groundwater and at non-detectable levels in the stream. RECON recommends continued monitoring of the monitor wells and stream on a quarterly basis for the next three quarters to verify these results.

RECON also recommends verification sampling of the monitor wells for the presence of PHCs, VOCs (EPA Method 624+15) and BNs (EPA Method 625+15). If the results are similar to those already recorded we propose drilling a fifth monitor well to the north-east of the main building (see Figure 3). After completion of that new well, a pump test is proposed to determine hydraulic characteristics of the rock. This data would permit the design a recovery system, if required.

Delineation of the "mineral spirits" found near the surface is recommended. An initial scan of the site will be performed using a soil vapor survey. Fifty (50) locations will be selected and a 1/2 inch hole driven to three (3) feet. The soil vapors will be analyzed for the presence of VOCs by use of an HNU. Verification samples (soil cores) will be proposed if a vapor plume is detected.

TABLE 1
U.S. BRONZE

mg/kg or mg/l

SOIL STANDARDS	100	---	---	---	---	170	1.0	10.0
WATER STANDARDS	1.0	250	---	---	---	---	0.01	0.050

	MATRIX	TPH	SULFATES	pH	EP toxicity	Cu	total VOC+15	BN+15
SS-1	water	---	21.0	6.4	Cu	ND	---	---
SS-2	water	---	20.2	6.2		ND	---	---
MW-1	water	ND	74.9	5.8	---	---	ND	0.020
MW-2	water	43.8	10.3	6.0	---	---	1.83	0.647
MW-3	water	ND	175	5.7	---	---	0.019	0.083
MW-4	water	ND	50.2	5.7	---	---	0.005	ND
FB	water	ND	ND	---	---	---	ND	ND
CS-1	soil	---	2600	5.50	0.23	6680	ND	ND
CS-2	soil	---	1250	4.9	ND	809	ND	
CS-3	soil	---	1410	4.75	ND	580	ND	
FB	water	---	0.8		<0.03	0.02		
TS-1	water	---	---	---	---	---	0.016	---

in mg/l	SS-1	SS-2	MW-1	MW-2	MW-3	MW-4	Water Standards
Antimony	---	---	ND	0.2	0.2	ND	---
Arsenic	---	---	ND	ND	ND	ND	0.050
Beryllium	---	---	ND	ND	ND	ND	---
Cadmium	---	---	ND	ND	ND	ND	0.01
Chromium	---	---	ND	ND	ND	ND	0.05
Calcium	14.7	14.2	---	---	---	---	---
Copper	ND	ND	0.12	0.05	0.05	0.04	1.0
Iron	---	---	20.1	5.17	10.6	10.9	---
Lead	---	---	ND	ND	ND	ND	0.05
Manganese	---	---	0.23	1.69	1.87	0.23	---
Mercury	---	---	ND	ND	ND	ND	0.002
Nickel	---	---	0.03	ND	ND	ND	---
Selenium	---	---	ND	ND	ND	ND	0.01
Silver	---	---	ND	ND	ND	ND	0.05
Thallium	---	---	ND	ND	ND	ND	---
Zinc	---	---	0.574	0.087	0.034	0.526	5.0

KEY:
ND - Not found in concentrations above method detection limits.
--- - Not analyzed.

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WR-13SA
/83

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

PERMIT NO. 24-25620-0
APPLICATION NO. _____
COUNTY Hunterdon
COORD. 24.44.294

WELL RECORD

1. OWNER U.S. BRONZE ADDRESS Route 202 North Flemington, NJ 0882
Owner's Well No. MW-1 SURFACE ELEVATION 160.32 Feet (Above mean sea level)
2. LOCATION Route 202 North Flemington, NJ 08829
3. DATE COMPLETED 7/13/89 DRILLER STOTHOFF DRILLING COMPANY
4. DIAMETER: Top 6 inches Bottom 6 inches TOTAL DEPTH 115 Feet
5. CASING: Type Steel Diameter 6 Inches Length 23 Feet
6. SCREEN: Type _____ Size of Opening _____ Diameter _____ Inches Length _____ Feet
Range in Depth { Top _____ Feet / Bottom _____ Feet Geologic Formation Passaic fm.
Tail Piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per minute at _____ Feet above surface
Water rises to _____ Feet above surface
8. RECORD OF TEST: Date _____ Yield _____ Gallons per minute
Static water level before pumping 40.28 Feet below surface
Pumping level _____ feet below surface after _____ hours pumping
Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
How pumped _____ How measured _____
Observed effect on nearby wells _____
9. PERMANENT PUMPING EQUIPMENT:
Type _____ Mfrs. Name _____
Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
10. USED FOR Monitoring AMOUNT { Average _____ Gallons Daily / Maximum _____ Gallons Daily
11. QUALITY OF WATER _____ Sample: Yes _____ No _____
Taste _____ Odor _____ Color _____ Temp. _____ °F.
12. LOG See Attached Log Are samples available? No
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
13. SOURCE OF DATA Drillers Logs
14. DATA OBTAINED BY RECON SYSTEMS, INC. Date 7/13/89

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

L 13

WH-13A
/85

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

PERMIT NO. 24-25621-8
APPLICATION NO. _____
COUNTY Hunterdon
COORD. 24.44.294

WELL RECORD

1. OWNER U.S. BRONZE ADDRESS Route 202 North Flemington, NJ 08829
Owner's Well No. MW-2 SURFACE ELEVATION 158.75 Feet (Above mean sea level)
2. LOCATION Route 202 North Flemington, NJ 08829
3. DATE COMPLETED 7/13/89 DRILLER STOTHOFF DRILLING COMPANY
4. DIAMETER: Top 6 inches Bottom 6 inches TOTAL DEPTH 60 Feet
5. CASING: Type Steel Diameter 6 Inches Length 25 Feet
6. SCREEN: Type _____ Size of Opening _____ Diameter _____ Inches Length _____ Feet
Range in Depth { Top _____ Feet / Bottom _____ Feet Geologic Formation Passiac fm.
Tail Piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per minute at _____ Feet above surface
Water rises to _____ Feet above surface
8. RECORD OF TEST: Date _____ Yield _____ Gallons per minute
Static water level before pumping 38.28 Feet below surface
Pumping level _____ feet below surface after _____ hours pumping
Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
How pumped _____ How measured _____
Observed effect on nearby wells _____
9. PERMANENT PUMPING EQUIPMENT:
Type _____ Mfrs. Name _____
Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
USED FOR Monitoring AMOUNT { Average _____ Gallons Daily / Maximum _____ Gallons Daily
QUALITY OF WATER _____ Sample: Yes _____ No _____
Taste _____ Odor _____ Color _____ Temp. _____ °F.
LOG See Attached Log Are samples available? No
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
SOURCE OF DATA Drillers Log
DATA OBTAINED BY RECON SYSTEMS, INC. Date 7/13/89

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

L 14

DWR-133A
1/85

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

PERMIT NO. 24-25619-6
APPLICATION NO. _____
COUNTY Hunterdon
COORD. 24.44.294

WELL RECORD

1. OWNER U S BRONZE ADDRESS Route 202 North Flemington, NJ 0882
   Owner's Well No. MW-3 SURFACE ELEVATION 156.04 Feet (Above mean sea level)
2. LOCATION Route 202 North Flemington, NJ 08829
3. DATE COMPLETED 7-13-89 DRILLER STOTHOFF DRILLING COMPANY
4. DIAMETER: Top 6 inches Bottom 6 inches TOTAL DEPTH 65 Feet
5. CASING: Type Steel Diameter 6 Inches Length 25 Feet
6. SCREEN: Type _____ Size of Opening _____ Diameter _____ Inches Length _____ Feet
   Range in Depth { Top _____ Feet; Bottom _____ Feet } Geologic Formation Passiac fm.
   Tail Piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per minute at _____ Feet above surface
   Water rises to _____ Feet above surface
8. RECORD OF TEST: Date _____ Yield _____ Gallons per minute
   Static water level before pumping 35.86 Feet below surface
   Pumping level _____ feet below surface after _____ hours pumping
   Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
   How pumped _____ How measured _____
   Observed effect on nearby wells _____
9. PERMANENT PUMPING EQUIPMENT:
   Type _____ Mfrs. Name _____
   Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
   Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
   Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
10. USED FOR Monitoring AMOUNT { Average _____ Gallons Daily; Maximum _____ Gallons Daily }
11. QUALITY OF WATER _____ Sample: Yes _____ No _____
    Taste _____ Odor _____ Color _____ Temp. _____ °F.
12. LOG See Attached Log Are samples available? No
    (Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
13. SOURCE OF DATA Drillers Log
14. DATA OBTAINED BY RECON SYSTEMS, INC. Date 7/13/89

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

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1/88

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

PERMIT NO. 24-25678-1
APPLICATION NO. _____
COUNTY Hunterdon
COORD. 24.44.294

WELL RECORD

1. OWNER U.S. BRONZE ADDRESS Route 202 North Flemington, NJ 08
Owner's Well No. MW-4 SURFACE ELEVATION 151.90 Ft. (Above mean sea level) Feet
2. LOCATION Route 202 North Flemington, NJ 08829
3. DATE COMPLETED 7/13/89 DRILLER STOTHOFF DRILLING COMPANY
4. DIAMETER: Top 6 inches Bottom 6 inches TOTAL DEPTH 75 Feet
5. CASING: Type Steel Diameter 6 Inches Length 25 Feet
6. SCREEN: Type _____ Size of Opening _____ Diameter _____ Inches Length _____ Feet
Range in Depth { Top _____ Feet / Bottom _____ Feet Geologic Formation Passaic fm.
Tail Piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per minute at _____ Feet above surface
Water rises to _____ Feet above surface
8. RECORD OF TEST: Date _____ Yield _____ Gallons per minute
Static water level before pumping 33.62 Feet below surface
Pumping level _____ feet below surface after _____ hours pumping
Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
How pumped _____ How measured _____
Observed effect on nearby wells _____
9. PERMANENT PUMPING EQUIPMENT:
Type _____ Mfrs. Name _____
Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
10. USED FOR Monitoring AMOUNT { Average _____ Gallons Daily / Maximum _____ Gallons Daily
11. QUALITY OF WATER _____ Sample: Yes _____ No _____
Taste _____ Odor _____ Color _____ Temp. _____ °F.
12. LOG See Attached Log Are samples available? NO
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
13. SOURCE OF DATA Drillers Log
14. DATA OBTAINED BY RECON SYSTEMS, INC. Date 7/13/89

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

L 16

ATTACHMENT M

RECON SYSTEMS, INC.

Route 202 North, P.O. Box 460
Three Bridges, N.J. 08887-0460
201-782-5900

New England 508-752-4217 Pennsylvania 215-433-5511
Connecticut 203-293-1212 New Hampshire 603-431-7500
FAX 201-782-0072

10-09-01

July 2, 1990

Mr. Gary Pearson
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
Northern Bureau of Regional Enforcement
Division of Water Resources
Enforcement Element
1259, Route 46 East, Bldg. No. 2
Parsippany, NJ 07054

RE: U.S. BRONZE POWDERS
Flemington, New Jersey

RECON Project No. 1596

Dear Mr. Pearson:

RECON SYSTEMS INC., with approval from U.S. BRONZE, performed a soil gas survey on February 22, 1990 to delineate the extent of the vapor (mineral spirits) plume. The results from the survey were submitted to NJ DEP in a letter entitled "Soil Vapor Survey" dated March 19, 1990.

Based on the results obtained, soil sampling was proposed. This sampling was performed on March 28, 1990. The results from soil sampling confirmed the soil vapor results.

Soil Sampling Methodology

Six inch diameter soil borings were drilled to various sampling depths using a Simco 2800 trailer mounted hollow stem auger drill rig. Soil samples were collected from eight sampling locations (S-1 to S-8) using two inch split spoon samplers. Figure 1 shows the actual soil sampling locations at the site. The boring logs in Attachment B explain in detail the lithology of each boring location and the samples collected at different depths. The collected soil samples were transported to RECON laboratory for analysis. All samples were analyzed for mineral spirits and the summary of the results is presented in Attachment A. A complete set of analytical data is presented in Attachment C.

m'

The results from soil sampling (Figure 1) confirm the presence of mineral spirits. The concentration of mineral spirits found in soil samples from each location correlated with the soil vapor levels. Multiple samples were collected from each boring, and the isopleth lines shown in Figure 1, were produced from the highest concentration of mineral spirits found in each boring.

Groundwater Sampling Methodology

Monitoring wells MW-1 through MW-4 were drilled in compliance with the State specifications for a consolidated "rock" well. Well construction logs are attached in Attachment B.

Groundwater samples were collected from all wells on December 13, 1989. Figure 2 shows the location of each monitoring well. The collected groundwater samples were transported to RECON's laboratory for analysis. All groundwater samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs) via US EPA Method 624 +15 and base neutral compounds (BN) via US EPA Method 625 +15. The results (Attachment A) confirm the presence of TPH and VOCs at location MW-3 in excess of ECRA cleanup action levels.

Based on the results obtained, we propose alternative cleanup levels for soil and the following tasks be performed for remediating groundwater.

Proposed Alternative Cleanup Levels for Soil

The concentrations of mineral spirits found in soil samples range from None Detectable (ND) up to 210 mg/kg. The median concentration was 0.8 mg/kg and mean concentrations of the 14 samples was 26.6 mg/kg. Based on this information, we propose an alternative cleanup level of 250 mg/kg for soil containing mineral spirits.

The rationale for proposing 250 mg/kg is as follows:

1. Soil containing mineral spirits (210 mg/kg) was obtained from only one (1) sample (see Attachment A). The average value was 26.6 mg/kg.

2. The source of the mineral spirits is believed to be underground mineral spirit tanks. These tanks were removed in the early 1980's, hence no further contamination can occur.

m2

3. Mineral spirits are closely related to petroleum hydrocarbons (PHCs) in their nature of occurrence and chemical properties (both are products of petroleum distillation), and therefore both products should be considered in the same way.

4. Any leaching of mineral spirits into the groundwater will be treated through an ongoing groundwater recovery treatment system as described below.

Proposed Remediation Plan for Groundwater

Based on the results obtained (Attachment A), we propose the following tasks be performed for remediating the existing groundwater problem:

1. Installation of a recovery (submersible) pump in monitoring well MW-3 capable of recovering groundwater at a rate of 5 gpm.

2. Installation of all pump controls, flow meters, totalizer, electrical controls with alarm systems and master control panel on the pad to allow proper operation of the recovery and remediation system.

3. Construction of a concrete pad.

4. Installation of an activated carbon system on the pad capable of treating the recovered groundwater containing 30 ppm total petroleum hydrocarbons (TPH), 3 ppm volatile organics (VOC's) and any leached mineral spirits from soil.

5. Discharge of the treated groundwater to surface waters in compliance with current NJPDES requirements, as per U.S. Bronze Permit No. NJ0003336.

A schematic of the proposed groundwater treatment is shown in Figure 3.

Conclusions

Based on the results of the soil sampling and soil vapor study, the most likely source of mineral spirits was the underground tanks where mineral spirits had been stored. These tanks were located near MW-2 and have already been removed. Concentration of mineral spirits range from between None Detectable (ND), <0.5 mg/kg up to 210 mg/kg.

U.S. Bronze will move ahead at peril with a remediation program for the small groundwater problem located in MW-3. MW-1, MW-2 and MW-4 are located down gradient from MW-3 and have no significant levels of the compounds found in MW-3. Early remediation of this isolated problem will prevent further spread of contamination.

m3

A brief cost estimate for the above tasks is presented in Attachment D.

If you wish to discuss the suggested remediation tasks we would be happy to talk with you. Should you have any questions, please call Mr. Douglas Reid-Green or Mr. Babu S. Sanji at 201-782-5900.

Yours very truly,

Babu Sanji
Civil Engineer

Reviewed by

J. Douglas Reid-Green
Manager, Site Investigation/
Remediation Technology

BS/ab
Enclosure
cc: B. Klotz
N. Nielson

m4

ATTACHMENT A

SUMMARY OF SOIL SAMPLING ANALYSIS

Recon Sample No.	Sample description (soil), at depth (ft)	Mineral Spirits (mg/kg)
19914	S1/1, 3-3.5′	ND
19915	S1/2, 5.5-6′	ND
19916	S2/1, 3-3.5′	ND
19917	S2/2, 6-6.5′	0.8
19918	S3/1, 3-3.5′	5.7
19919	S4/1, 3-3.5′	56.0
19920	S4/2, 4.5-5′	29.0
19921	S4/3, 8.5-9′	210.0
19922	S5/1, 3-3.5′	11.0
19923	S6/1, 0.5-1′	ND
19924	S7/1, 3-3.5′	60.0
19925	S7/2, 5.9-6.4′	ND
19926	S8/1, 3-3.5′	ND
19927	S8/2, 4-4.5′	ND

ND = None Detected

m5

ATTACHMENT A

SUMMARY OF ANALYTICAL RESULTS

RECON Project No. 1596

All Concentrations in ppm
Sampled December 13, 1989

Sample Identification No.	MW-1	MW-2	MW-3	MW-4	CS 1/2	CS 2/2	CS 3/2
RECON Sample No.	18835	18836	18837	18838	18832	18833	18834
ACCUTEST Sample No.	E9926532	E926533	E926534	E926535	---	---	---
Sample Matrix	Water	Water	Water	Water	Soil	Soil	Soil
PARAMETERS							
Total Petroleum Hydrocarbons	<0.5	<0.5	30.1	ND			
Copper (EP TOX Copper for Soils)	0.03	<0.02	<0.02	<0.02	0.37	0.06	0.07
Sulfate	40.7	235.0	18.1	87.7	160	170	160
pH	7.6	6.9	7.0	7.3	5.63	5.65	4.87
Volatile Organic Compounds							
1,1-Dichloroethane	ND	0.019	0.20	ND			
1,1-Dichloroethylene	ND	ND	0.27	ND			
Ethylbenzene	ND	ND	0.057	ND			
1,1,1-Trichloroethane	ND	ND	0.19	ND			
m-Xylene	ND	ND	0.11	ND			
p,o-Xylene	ND	ND	0.053	ND			
TOTAL IDENTIFIED VOCs		0.019	0.88				
TOTAL TIC	ND	ND	1.685	ND			
TOTAL VOCs		0.019	2.565				
Base Neutral Compounds							
bis (2-ethylhexyl) Phthalate	ND	ND	0.014	ND			
Naphthalene	ND	ND	0.11	ND			
TOTAL IDENTIFIED BNs			0.124				
TOTAL TIC	0.008	0.034	0.407	0.023			

1596.90 6.15.90

MONITORING WELL NO. MW-1

RECON SYSTEMS, INC.
THREE BRIDGES, NJ

PERMIT NO. 24-25620-6

SHEET 1 OF 1

JOB NO.	CLIENT	PROJECT LOCATION
1524	U.S. BRONZE	FLEMINGTON, N.J.

LOCATION OF WELL	ELEVATION AND DATUM
10' W of NW CORNER of MANUFACTURING BUILDING	160.32 FT top of casing

DRILLING CONTRACTOR	DRILLER	INSPECTOR
STOTHOFF DRILLING COMPANY	JIM	EAR/DRG

DRILLING RIG TYPE	BIT TYPE	DATE STARTED	DATE COMPLETED
AIR ROTARY	6.25 IN.	7/12/89	7/13/89

SAMPLER TYPE	HAMMER WEIGHT	DROP	TOTAL DEPTH	WATER LEVEL
			115 FT.	40.28 FT

SAMPLE NO.	SAMPLE BLOWS	LITH TYPE	DEPTH FT.	WATER	LITHOLOGY	WELL CONSTRUCTION
			10		ASPHALT 0-0.4 ft. SOIL 0.4 - 6.5 ft. SHALE 6.5- 115 ft. weathered, red-brown no odor. Passaic fm.	Flush mount, manhole 8 inch ID. Locking cap Master lock # 2010 Casing : Steel 0 - 23 ft. bg 6 inch ID Grout 0 - 23 ft.
			20			
			30			
			40	▽		
			50			
			60			
			70			
			80			
			90			
			100			
			110			
			120			

m7

RECON SYSTEMS, INC.
THREE BRIDGES, NJ

PERMIT NO. 24-25621-8

SHEET 1 OF 1

JOB NO.	CLIENT	PROJECT LOCATION
1524	U.S. BRONZE	FLEMINGTON, N.J.
LOCATION OF WELL: CENTER OF ALCOVE ON S. SIDE OF MACHINE SHOP		ELEVATION AND DATUM: 160.75 FT top of casing
DRILLING CONTRACTOR: STOTHOFF DRILLING COMPANY	DRILLER: JIM	INSPECTOR: EAK/DRG
DRILLING RIG TYPE: AIR ROTARY	BIT TYPE: 6.25 IN.	DATE STARTED: 7/12/89 — DATE COMPLETED: 7/13/89
SAMPLER TYPE	HAMMER WEIGHT / DROP	TOTAL DEPTH: 60 ft. — WATER LEVEL: 38.28 FT

SAMPLE NO.	SAMPLE BLOWS	LITH TYPE	DEPTH FT.	WATER	LITHOLOGY	WELL CONSTRUCTION
			10		SOIL 0-8.0 ft. loamy red-brown.	Cap
			20		SHALE 8.0- 60 ft. weathered, red-brown	Master lock # 2010
			30		Odor at 15 ft. of mineral spirits.	Casing : Steel
			40	▽		2 ft. ag
			50		Passaic fm.	23 ft. bg
			60			6 inch ID.
			70			Grout 0 - 23 ft
			80			ag = above grade
			90			bg = below grade
			100			
			110			
			120			

m8

MONITORING WELL NO. MW-3

RECON SYSTEMS, INC.
THREE BRIDGES, NJ

PERMIT NO. 24-25619-6

SHEET 1 OF 1

JOB NO.	CLIENT		PROJECT LOCATION
1524	U.S. BRONZE		FLEMINGTON, N.J.
LOCATION OF WELL			ELEVATION AND DATUM
33' E, 7' S of SW CORNER MANUFACTUER BUILDNG			158.04 FT. top of casing
DRILLING CONTRACTOR	DRILLER		INSPECTOR
STOTHOFF DRILLING COMPANY	JIM		EAR/DRG
DRILLING RIG TYPE	BIT TYPE		DATE STARTED / DATE COMPLETED
AIR ROTARY	6.25 IN.		7/12/89 / 7/13/89
SAMPLER TYPE	HAMMER WEIGHT	DROP	TOTAL DEPTH / WATER LEVEL
			65 FT. / 35.86 FT

SAMPLE NO.	SAMPLE BLOWS	LITH TYPE	DEPTH FT.	WATER	LITHOLOGY	WELL CONSTRUCTION
					GRASS 0-0.1 ft.	Cap
					SOIL 0.1-6.0 ft.	Master lock # 2010
			10		SHALE 6-65 ft.	Casing : steel
					weathered, red-brown	2 ft. ag
					Odor at 15 ft. of	23 ft. bg
			20		mineral spirits.	6 inch ID.
						Grout 0-23 ft
					Passaic fm.	ag = above grade
			30			bg = below grade
			40			
			50			
			60			
				▽		
			70			
			80			
			90			
			100			
			110			
			120			

M9

RECON SYSTEMS, INC.
THREE BRIDGES, NJ

MONITORING WELL NO. MW-4

PERMIT NO. 24-25678-1

SHEET 1 OF 1

JOB NO.	CLIENT	PROJECT LOCATION
1524	U.S. BRONZE	FLEMINGTON, N.J.

LOCATION OF WELL	ELEVATION AND DATUM
8' W, 17' S of SE CORNER MANUFACTURING BLDG	153.90 FT. top of casing

DRILLING CONTRACTOR	DRILLER	INSPECTOR
STOTHOFF DRILLING COMPANY	JIM	EAR/DRG

DRILLING RIG TYPE	BIT TYPE	DATE STARTED	DATE COMPLETED
AIR ROTARY	6.25 IN.	7/12/89	7/13/89

SAMPLER TYPE	HAMMER WEIGHT	DROP	TOTAL DEPTH	WATER LEVEL
			75 FT.	33.62 FT

SAMPLE NO.	SAMPLE BLOWS	LITH TYPE	DEPTH FT.	WATER	LITHOLOGY	WELL CONSTRUCTION
			0		SOIL 0-3 ft. silty red-brown SHALE 3-75 ft weathered, red-brown Passiac fm. slight odor of mineral spirits.	Cap Master lock # 2010 Casing : steel 2 ft. ag 23 ft. bg 6 inch ID. Grout 0-23 ft. ag = above grade bg = below grade
			10			
			20			
			30	▽		
			40			
			50			
			60			
			70			
			80			
			90			
			100			
			110			
			120			

M10

ATTACHMENT N

Bureau

MAY 28 1 22 PM '91

Applied Wastewater Technology, Inc.

☐ 2 Clerico Lane
P.O. Box 1079
Belle Mead, NJ 08502-1079
201/359-5501
FAX: 201/359-8286

☐ P.O. Box 1506
Bethlehem, PA 18016-1506
215/758-8000
FAX: 215/758-8003

May 23, 1991

Mr. Robert Oberthaler, Chief
Bureau of Industrial Discharge Permits
N.J. Department of Environmental Protection
CN 029
Trenton, NJ 08625

RE: Proposed Discharge Permit Modification
U.S. Bronze Powders, Flemington, N.J.
NJ0003336

Dear Mr. Oberthaler:

U.S. Bronze Powders has a Discharge to Surface Water Permit for the discharge of Industrial/Commercial-Category B (water softener regeneration wastes), Themal-Category C (non-contact cooling water blowdown), Oil/Water Separators-Category W, and Group I - Stormwater Runoff, Category 5, to the Mill Creek, a tributary to the South Branch, Raritan River.

Approvals have been obtained and construction completed on a minor sewer extension to route the Category B and C discharges to the Raritan Township MUA's treatment plant.

The water softener regeneration wastewater and the cooling water blowdown were the only "process" wastewater being discharged to the Mill Creek by U.S. Bronze. Now that these streams are going to the RTMUA treatment plant, the only discharge remaining is stormwater runoff, which is currently routed through the oil/water separator.

U.S. Bronze Powders is requesting a modification of their discharge permit in light of the above mentioned changes. In particular, U.S. Bronze Powders respectfully requests a reevaluation of the extremely stringent limits for copper and zinc; 14 and 97 micrograms/L (ppb), respectively. These limits

N'

were based on EPA water quality criteria for the protection of aquatic life, and these standards were directly imposed since the MA7CD10 for Mill Creek is zero. Since U.S. Bronze Powder's discharge now consists solely of stormwater runoff, there will be no discharge from U.S. Bronze Powder during low flow periods in the Mill Creek, a revision of the permit limits would seem appropriate.

We would like to set up a pre-application meeting to detail the necessary requirements for a permit modification. Thank you for your attention to this matter, and please call if you have any questions or need further information.

Sincerely,

Michael A. Zavoda, P.E.

MAZ:mk
cc: Rey Morales
Richard Schacter
William Boehle, P.E.
Mellise Willuz
Sharon Coe
90-824C <AWT>

ATTACHMENT O

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
POST OFFICE BOX CN-029
TRENTON, N. J. 08625

File N.P.D.E.S

JUL 2 1981

U.S. Bronze Powders, Inc.
P.O. Box 31
Flemington, New Jersey 08822

Re: Compliance Monitoring Inspection
U.S. Bronze Powders, Inc.
N.P.D.E.S. N.I. 003336
Raritan Township

Dear Permittee:

A Compliance Monitoring Inspection of your facility was conducted by a representative of this Division on May 21, 1981

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

The oil/water seperator and metal recovery unit, presently in operation at your plant, is considered to be an industrial wastewater treatment facility and the plans and specifications must be submitted to and approved by this Department. Please contact Mr. Paul Kurisko, Chief, Bureau of Industrial Waste Management at (609) 292-4860 for additional information.

During the inspection, it was noted that many containers, barrels and drums of various types, were stored to the rear, and in the loading dock area of your facility. Please provide this department with a list of these materials and liquids in these containers. Also, locate any storm water, yard or floor drains in these areas, and where they terminate. The purpose of this being that a possible groundwater or stream contamination problem may exist from this area. If any of these materials are being reclaimed or recycled, please list the name and addresses of Companies and Carrier(s).

The U.S.E.P.A. and the Bureau of Industrial Waste Management (DEP) will be advised that the final NPDES permit has not yet been issued for your facility.

01

Please copy all correspondence and inquiries to Robert W. Vandegrift, the Compliance Monitoring Unit Inspector responsible for this case who can be reached at (609) 984-3661 or by letter through this Division.

Very truly yours,

ORIGINAL SIGNED BY

Alfred W. Valencia, Supervisor
Compliance Monitoring Unit
Region V
Enforcement & Regulatory
Services Element

A-2:G10

cc: U.S.E.P.A. Permits Administration Element
Mr. Paul Kurisko, Chief, Bureau of Industrial Waste Management
Bureau of Hazardous Management

bcc: Roche, Linda, Vandegrift, file,

02

File

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WATER RESOURCES
P. O. BOX CN 029
TRENTON, NEW JERSEY 08625

ARNOLD SCHIFFMAN
DIRECTOR

United States Bronze Powders, Inc.
P.O. Box 31, Rte. 202
Flemington, New Jersey 08822

MAR 1 1982

Attention: Niels L. Nielson
Vice President, Operations

Re: Your Letter Dated February 8, 1982
U.S. Bronze Powders, Inc., N.J. 0003336
Raritan Township

Dear Mr. Nielson:

This will acknowledge receipt of the above referenced letter and serve as a response to your question regarding the unapproved separator.

Although the separator installation was coordinated with the New Jersey Department of Health a permit was never issued and it was not until this Department, on March 6, 1981, issued new regulations entitled, Regulations Concerning the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A-1 et seq.) that we had a mechanism to review and approve this type of treatment facility. Furthermore, it was not until the Water Pollution Control Act of 1972 was passed that this Department began to monitor cooling water discharges. This Department has always been concerned about cooling water discharges, but enforcement action was only taken in regards to contaminated cooling water discharges. We may have been wrong in referring to the unit as an oil/water separator but since, in your letter, you advise that its purpose is to separate particles of metal powders from the cooling water discharge this unit must be considered a treatment works and appropriate approvals must be obtained from the Water Quality Management Element.

Please contact Paul Kurisko, Chief, Bureau of Industrial Waste Management Element, or one of his staff at (609) 292-4860 for more information on your submittal.

You are also requested to respond in writing within fifteen (15) days of receipt of this letter indicating your intentions concerning the N.J.P.D.E.S. regulations.

Very truly yours,

Alfred W. Valencia

Alfred W. Valencia, Supervisor
Compliance Monitoring Unit
Region V
Enforcement & Regulatory
Services Element

A2:raf
cc: U.S.E.P.A., Permits Admin. Br.
Paul Kurisko, Bur. of Ind. Waste Mgmt.

04

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 ROUTE 46, BUILDING 2
PARSIPPANY, NEW JERSEY 07054

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

DEC 17 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Niels L. Nielson
Vice President, Operations
U.S. Bronze Powders, Inc.
P.O. Box 21, Rt. 202
Flemington, New Jersey 08822

Dear Mr. Nielson:

Re: Compliance Evaluation Inspection
U.S. Bronze Powders, Inc.
NJPDES No.: ~~NJ0002226~~ (DSW) NJ0003336
Munic/County: Raritan Township, Hunterdon County

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on November 10, 1987. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1. At the time of the inspection, the oil water separator was being short circuited due to rain, and was therefore providing inadequate treatment.

2. A review of the Quarterly Monitoring Report for the period of May 1, 1987 to July 31, 1987 indicated discharge violations for the following parameters:

Parameter	Permit Discharge Limit Maximum	Reported Data
Petroleum Hydrocarbons (mg/l)	1.0	37 mg/l
Copper (mg/l)	1.0	2.2 mg/l

05

3. There is no Licensed Operator holding a N-1 license to operate the oil water separator.

4. The final effluent was blue-grey and turbid.

5. During the inspection it was observed that the operation of the copper sulfate processing area had ceased. The cemented troughs that carried the copper sulfate solution were found empty and deteriorated. As a result, the excessive deterioration has caused the discharge of copper sulfate to the ground waters of the State without a valid NJPDES permit. This is in violation of N.J.A.C. 7:14A-6 et seq., and directive letter issued by this office on April 30, 1987.

Since the deficiencies cited are presently, or could in the future, adversely affect effluent quality, you are DIRECTED to:

A. Within fifteen (15) calendar days of the date of this letter, hire a licensed professional engineer to investigate the short circuiting treatment problems experienced by the oil water separator during wet weather flow periods.

B. Within thirty (30) calendar days of receipt of this letter, submit a completed NJPDES/DGW Closure permit application. The application must be sent to the following address:

George Caporale, Chief
Bureau of Permits Administration
Water Quality Management Element
Division of Water Resources
CN-209
Trenton, New Jersey 08625

C. Within forty-five (45) calendar days of the date of this letter submit a report prepared by a licensed engineer, to the Department. The report shall contain findings of the investigation required in paragraph A and a proposal with a time schedule for elimination of the short circuiting problems during wet weather flow periods.

1. Should the Department determine that the engineering report is inadequate or incomplete, the Department shall provide U.S. Bronze with written notification of the deficiencies and the Borough shall revise and resubmit the required information within thirty (30) calendar days of receipt of such notification.

D. Within forty-five (45) calendar days of receipt of this letter submit a written report addressing items 2-4, including the specific details of remedial measures to be instituted, as well as an implementation timetable. A copy of this report shall be submitted to this office and USEPA and NJDEP's Permits Administration Branches.

06

Please be advised that the Department is preparing an Administrative Order and Notice of Civil Administrative Penalty Assessment for past and present violations of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. Furthermore, full compliance with the above terms and conditions shall not preclude such action.

Please direct all correspondence and inquiries to Elaine Stallings, the Senior Environmental Specialist, responsible for this case, who can be reached at (201) 299-7592 or by letter through this Division.

Very truly yours,

Robert Plumb, Assistant Chief
Northern Bureau of Regional
Enforcement

E106:G5.3(PC4)

c: Chief Joseph M. Mikulka, Northern Bureau of Regional Enforcement
Richard Baker, USEPA - Region II
Paul Molinari, USEPA - Region II
John Beckley, Hunterdon County Health Department
John Niechniedowicz, Plant Superintendent
Terry J. Keth, Plant Engineer
Chief George Caporale, Bureau of Permits Administration

bc: Robert Plumb
Harry Kachroo
Elaine Stallings
Bureau File THRU W. Kelroy
Central File/NJPDES, Raritan Township, Hunterdon County
Enforcement Actions (Virginia Kennedy)

07

DL

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 ROUTE 46, BUILDING 2
PARSIPPANY, NEW JERSEY 07054

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

AUG 2 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Niels L. Nielson
Vice President, Operations
U.S. Bronze Powders, Incorporated
P.O. Box 21, Route 202
Flemington, New Jersey 08822

Dear Mr. Nielson:

Re: Compliance Evaluation Inspection
U.S. Bronze Powders, Incorporated
NJPDES No.: NJ0003336
Class: MAJ-IND-DSW
Munic/County: Raritan Township, Hunterdon County

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on May 30, 1989. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1. A review of the Discharge Monitoring Report for the period of February 1, 1989 to April 30, 1989 indicated discharge violations for the following parameters:

Parameter	Permit Limit	Reported Data
Copper	1000 mg/l max.	1600
Zinc	1000 mg/l max.	2300

2. A review of the Discharge Monitoring Report for the period of November 1, 1988 to January 31, 1989 indicated discharge violations for the following parameters:

08

Parameter	Permit Limit	Reported Data
Chemical Oxygen Demand	100 mg/l	130
Copper	1000 mg/l	4200
Zinc	1000 mg/l	4000
Total Dissolved Solids	1000 mg/l	1200

3. Failure to sample your effluent and report on a monthly basis as required by Part III-B/C, Page 1 of 5, Permit No. NJ0003336.

4. During the inspection it was observed that the operation of the Copper Sulfate processing area had ceased. The cement troughs that carried the Copper Sulfate solution were found to be empty and deteriorated. It was apparent that the discharge of Copper Sulfate to the Ground Waters of the State occurred without a valid NJPDES permit. Resolution of this matter requires the submittal of a completed NJPDES/DGW Closure Permit Application. The Application must be sent to the following address:

George Caporale, Chief
Bureau of Information Systems
Wastewater Facilities Management Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

5. During the inspection material from a hazardous waste spill containment tank was observed being pumped and discharged to an adjacent unpaved area. This is a regulated activity and will require the submittal of a completed NJPDES/DGW Permit Application to the address in item 4. U.S. Bronze Powders is further directed to cease the discharge from the hazardous waste spill contaminant tank to the land until an appropriate NJPDES permit is obtained.

Since the deficiencies cited are presently, or may in the future, adversely affect effluent quality, you are DIRECTED to institute measures to correct the deficiencies. A written report concerning specific details of remedial measures to be instituted, as well as an implementation timetable, must be submitted to this Department and USEPA, Permits Administration Branch, within thirty (30) calendar days of the date of this correspondence.

Both the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.) provide for substantial monetary and criminal penalties in cases of permit violations.

Please direct all correspondence and inquiries to Deborah Linton, of my staff, who can be reached at (201) 299-7592 or by letter through this Division.

09

Failure to fully comply with the above will result in the initiation of enforcement action by this Department and/or the U.S. Environmental Protection Agency. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Joan F. Rogauskas

Joan F. Rogauskas, Acting Section Chief
Surface Water and Sewer System
Enforcement
Northern Bureau of Regional
Enforcement

A56:dc

Enclosure

c: Chief Joseph M. Mikulka, Northern Bureau of Regional Enforcement
Patrick Durack, USEPA - Region II
Chief, Permits Administration Branch, USEPA - Region II
Bruce Klotz, Plant Engineer
John Beckley, Hunterdon County Health Department
Chief George Caporale, Bureau of Information Systems

bc: Deborah Linton
Tom McClachrie
Bureau File THRU J. Rogauskas
Central File/NJPDES: NJ0003336, U.S. Bronze Powders, Raritan Township, Hunterdon County
Enforcement Actions (Virginia Kennedy) MAJ-IND-DSW

BF/JR

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 Route 46, Building 2
Parsippany, New Jersey 07054

(201) 299-7592
Fax # (201) 299-7719

MAY 15 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Niels L. Nielson, Vice President Operations
United States Bronze Powders, Incorporated
P.O. Box 31
Route 202 North
Flemington, New Jersey 08822

Dear Mr. Nielson:

Re: Compliance Evaluation Inspection
United States Bronze Powders, Incorporated
NJPDES No.: NJ0003336
Class: MIN-IND-DSW
Munic/County: Raritan Township, Hunterdon County

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on March 27, 1991. A copy of the completed inspection report form is enclosed for your information.

Your facility received a rating of "UNACCEPTABLE" due to the following deficiencies:

1. A review of Discharge Monitoring Reports (DMRs) and Monthly Monitoring Reports for the periods from February 1, 1990 through January 31, 1991 indicated the following exceedances of the of Permit effluent limitations for discharge number 001:

Copper

Monitoring Period	Permit Limit	Reported Results
May 1990	14 ug/l	450 ug/l
June 1990	14 ug/l	220 ug/l

July 1990	14 ug/l	120 ug/l
August 1990	14 ug/l	180 ug/l
September 1990	14 ug/l	430 ug/l
October 1990	14 ug/l	310 ug/l
November 1990	14 ug/l	420 ug/l
December 1990	14 ug/l	240 ug/l
January 1991	14 ug/l	170 ug/l
February 1991	14 ug/l	180 ug/l

Zinc

Monitoring Period	Permit Limit	Reported Results
May 1990	97 ug/l	270 ug/l
June 1990	97 ug/l	170 ug/l
August 1990	97 ug/l	110 ug/l
September 1990	97 ug/l	160 ug/l
October 1990	97 ug/l	140 ug/l
November 1990	97 ug/l	190 ug/l
December 1990	97 ug/l	340 ug/l
Janaury 1991	97 ug/l	120 ug/l
February 1991	97 ug/l	110 ug/l

Total Dissoved Solids

Monitoring Period	Permit Limit	Reported Results
February 1990	1000 mg/l	2000 mg/l
May 1990	500 mg/l	730 mg/l
July 1990	500 mg/l	2100 mg/l
August 1990	500 mg/l	830 mg/l
September 1990	500 mg/l	2500 mg/l
October 1990	500 mg/l	1600 mg/l
November 1990	500 mg/l	2000 mg/l
December 1990	500 mg/l	2200 mg/l
January 1991	500 mg/l	1000 mg/l
February 1991	500 mg/l	1200 mg/l

The following abbreviations were used in the table above:

mg/l = milligrams per liter
ug/l = micrograms per liter

2. Garb samples are being collected for both copper and zinc. The Permit requires composite samples for these parameters.

3. A review of acute toxicity tests submitted to the Department indicated that monitoring was not conducted for the following quarters:

February 1989 - April 1989
May 1989 - July 1989
November 1989 - January 1990
February 1990 - April 1990
May 1990 - July 1990
August 1990 - October 1990
November 1990 - January 1991

NOTE: Quarterly monitoring is required according to the New Jersey Pollutant Discharge Elimination System (NJPDES) Permit.

4. United States Bronze Powders, Incorporated failed to meet the compliance schedule in Part IV-B/C, Section 5 of its NJPDES Permit.

Since the deficiencies cited are presently, or may in the future, adversely affect effluent quality, you are DIRECTED to institute measures to correct the deficiencies. A written report concerning specific details of remedial measures to be instituted, as well as an implementation timetable, must be submitted to this Department and USEPA, Permits Administration Branch, 26 Federal Plaza, New York, New York 10278, within thirty (30) calendar days of the date of this correspondence.

Both the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.) provide for substantial monetary and criminal penalties in cases of Permit violations.

Please direct all correspondence and inquiries to Sharon Coe, of my staff, who can be reached at (201) 299-7592 or by letter through this Division.

Failure to fully comply with the above will result in the initiation of enforcement action by this Department and/or the U.S. Environmental Protection Agency. This shall in no way be construed, however, to indicate any exemption on your part from possible penalties for violations indicated by the Compliance Evaluation Inspection, as stated above.

Very truly yours,

Joan F. Rogauskas

Joan F. Rogauskas
Acting Section Chief
Surface Water and Sewer
System Enforcement
Northern Bureau of Regional
Enforcement

013

RECON SYSTEMS, INC.

Route 202 North, P.O. Box 460
Three Bridges, N.J. 08887
201-782-5900

New England 617-752-4217 Pennsylvania 215-433-5511

April 29, 1988

Mr. Terry Keth
US Bronze Powder
P.O. Box 31
Flemington, NJ 08822

RECON Project No. 1331

Dear Mr. Keth:

Enclosed please find a copy of the analytical results from the stream water and sediment samples taken on March 28, 1988. Samples were recovered upstream and downstream from the Flemington, New Jersey facility (see attached map).

The water shows no effect from U.S. Bronze.

Sulfate, pH and copper values recovered from the upstream sediment sample were similar to background values reported earlier. The downstream sediment sample contained similar amounts of sulfates and a similar pH value as the upstream sample. The downstream sediment sample, however, showed elevated copper content. A reading of 95.4 ppm of copper is higher than background, but well below the 170 ppm ECRA Action level for the copper.

Please contact us when the State has responded to the reporting of the previous analysis.

We look forward to working with you further on this project.

Yours very truly,

J. Douglas Reid-Green
Project Geologist

Norman Weinstein /AB
Norman J. Weinstein, Ph.D., P.E.
President

NJW/ab
enclosure
cc: Richard Schachter, Esq.

RECON SYSTEMS INC.

ROUTE 202N, P.O. BOX 460, THREE BRIDGES, N.J. 08887
201-782-5900
NEW ENGLAND 617-752-4217 PENNSYLVANIA 215-433-5511

ANALYSIS REPORT

April 20, 1988

TO: U. S. BRONZE PROJECT

Attn: Douglas Reid-Green
RECON Project No. 1331

SAMPLE: Soils and Water, 3/28/88

Sample Location:	Water Blank	Upstream Water	Downstream Water
RECON Sample No.:	10599	10600	10602
		mg/l	
Sulfate	ND<1	77.4	51.8
Copper	ND<0.02	<0.02	<0.02

Sample Location:	Upstream Soil	Downstream Soil
RECON Sample No.:	10601	10603
pH	6.97	7.01
	mg/kg	
Sulfate	60.1	69.7
Copper	26.1	95.4

Samples from this project will be retained for sixty (60) days from the date of this report unless otherwise directed.

Submitted by,

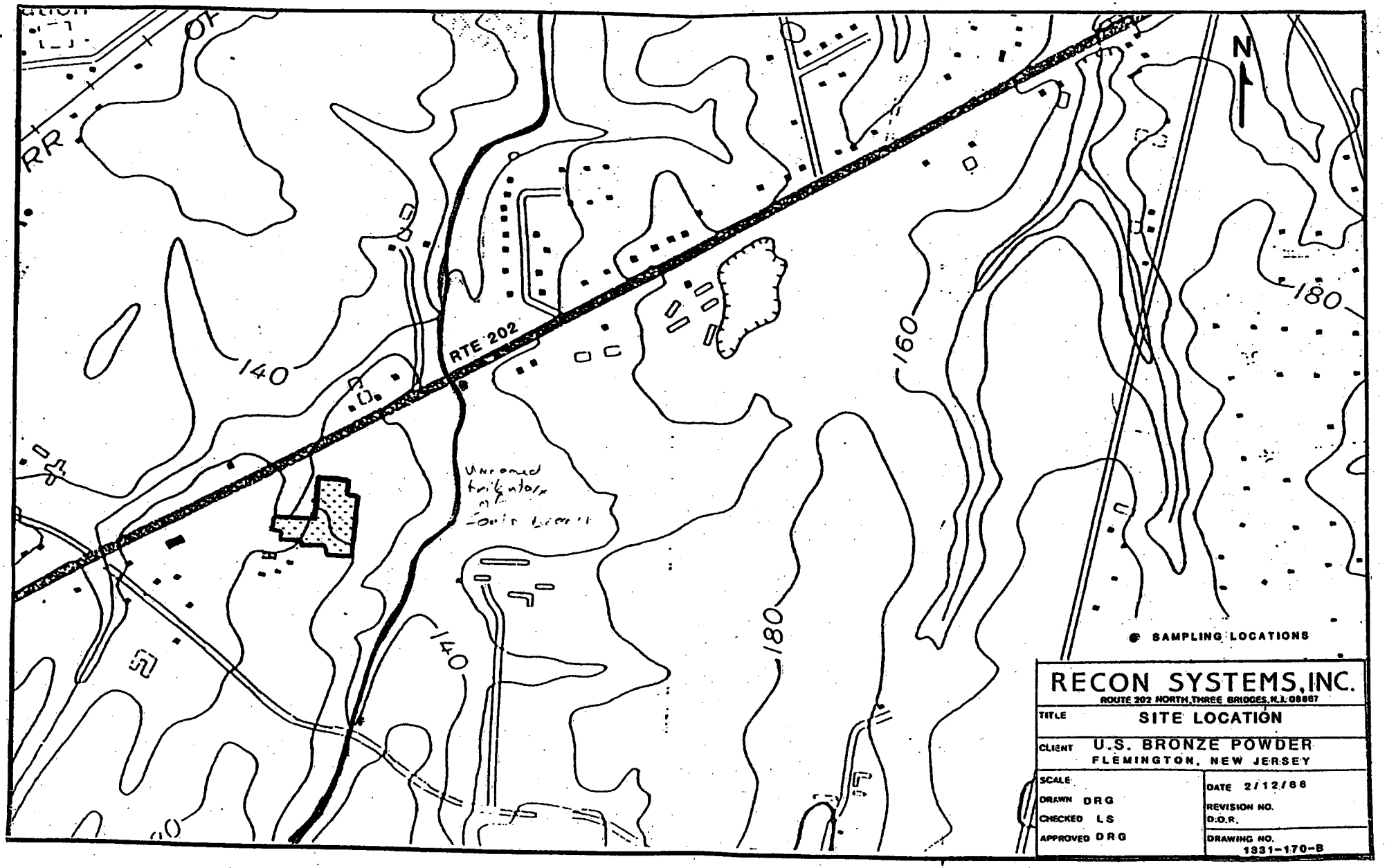
G. Stephen Hornberger

G. Stephen Hornberger, B.S.
Manager, Chemical Lab

GSH/cac
AR5

New Jersey State Certified Water Laboratory
Certification No. 10196

p2


RR
RTE 202
140
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@ SAMPLING LOCATIONS
RECON SYSTEMS, INC.
ROUTE 202 NORTH, THREE BRIDGES, N.J. 08887
TITLE
SITE LOCATION
CLIENT
U.S. BRONZE POWDER
FLEMINGTON, NEW JERSEY
SCALE
DRAWN DRG
CHECKED LS
APPROVED DRG
DATE 2/12/88
REVISION NO.
D.O.R.
DRAWING NO.
1331-170-8

P3

ATTACHMENT Q

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

George G. McCann, P.E.
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Terry J. Keth, Plant Engineer
United States Bronze Powders, Inc.
P.O. Box 31
Route 202
Flemington, New Jersey 08822-0031

SEP 30 1988

Dear Mr. Keth:

RE: NJPDES Permit No. NJ0003336
Effective Date: November 1, 1988

Enclosed is the Final NJPDES/DSW Permit to discharge pollutants to the Mill Creek, a tributary of the South Branch of the Raritan River issued in accordance with the New Jersey Pollutant Discharge Elimination System Regulations N.J.A.C. 7:14A-1 et seq. Violation of any condition of this permit may subject you to significant penalties.

The comments received on the draft permit and our responses are addressed in the enclosed document.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6, you may submit a request to the Administrator for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J.A.C. 7:14A-8.9 through 8.13. The request should be made to:

Acting Assistant Director
Wastewater Facilities Management Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

Applications for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

Q1

New Jersey Pollutant Discharge Elimination System

The New Jersey Department of Environmental Protection hereby restricts and controls the discharge of pollutants to waters of the State from the subject facility/activity in accordance with applicable laws and regulations. The permittee is responsible for compliance with the terms and conditions of this authorization and agrees to said terms and conditions as a requirement for the construction, installation, modification or operation of any facility for the collection, treatment or discharge of any pollutant to waters of the State.

PERMIT NUMBER NJ0003336

Permittee
US BRONZE POWDERS CORP
PO BOX 31
408 ROUTE 202
FLEMINGTON, NJ 08822

Co-Permittee

Property Owner
UNITED STATES BRONZE POWDERS
P.O. BOX 31
408 ROUTE 202
FLEMINGTON, NJ 08822

Location of Activity
US BRONZE POWDERS CORP
408 ROUTE 202
FLEMINGTON, NJ 08822

Type of Permit Covered By This Approval	Issuance Date	Effective Date	Expiration Date
B :Ind/Comm.SW Discharge	9/30/88	11/01/88	10/31/93
C :Thermal SW Discharge	9/30/88	11/01/88	10/31/93
W :Oil/Water Separators	9/30/88	11/01/88	10/31/93
5 :Group I - Stormwater Runoff	9/30/88	11/01/88	10/31/93

DISCHARGED TO: Mill Creek

CLASSIFICATION: FW2-NT

By Authority of:
George G. McCann, P.E.
Director
Division of Water Resources

DEP AUTHORIZATION
Leroy T. Cattaneo, P.E.
Acting Assistant Director
Wastewater Facilities Management Element

(Terms, conditions and provisions attached hereto)

Q2

State of New Jersey Department of Environmental Protection Division of Water Resources

J. Mikulka
Northern
(1) [illegible]
(2) [illegible]
(3) E [illegible]
(4) TM

New Jersey Department of Environmental Protection
Division of Water Resources
Bureau of Industrial Waste Management
CN-029
Trenton, N.J. 08625
(609) 292-0407

JUN 28 1988

PUBLIC NOTICE

JUN 23 1988

Notice is hereby given that the New Jersey Department of Environmental Protection, Division of Water Resources proposes to restrict and control the discharge of pollutants to the Mill Creek, a tributary tothe South Branch of the Raritan River, classified as FW2-NT, from:

United States Bronze Powders, Inc.
408 Route 202
Raritan Township, Hunterdon County
New Jersey 08822

The applicant is involved in powder metal manufacturing (SIC code 3399). The wastewater, consisting of non-contact cooling water, water softener regeneration wastewater and stormwater with an average flow of 6154 GPD, is treated by settling and oil skimming prior to discharge to the receiving stream. All process and sanitary wastewater is routed to the Raritan Township Regional Utilities Authority system.

The facility has been classified as a major discharger by the New Jersey Department of Environmental Protection in accordance with the U.S. EPA rating criteria.

This notice is being given to inform the public that NJDEP has prepared a draft NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES) permit modification (NJPDES Permit No. NJ0003336) in accordance with the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq.), which were promulgated pursuant to the authority of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.).

This is an existing facility, and issuance of a NJPDES permit is the enforcement mechanism by which pollutant discharges are brought into compliance with standards. The draft permit contains these conditions necessary to restrict the discharge of pollutants and protect the public health and environment.

Any water quality based effluent limitations that are included in the final permit (or DAC) shall be adopted as an amendment to the Statewide Water Quality Management Program Plan established under N.J.A.C. 7:15 without further adoption proceedings.

(1) 3

The draft document prepared by NJDEP is based on the administrative record which is on file at the offices of the NJDEP, Division of Water Resources, located at 401 East State Street in the City of Trenton, Mercer County, New Jersey. It is available for inspection, by appointment, between 8:30 a.m. and 4:00 p.m., Monday through Friday. Appointments for inspection of the file may be scheduled by calling (609) 633-6620. Copies of the draft permit may be obtained for a nominal charge by contacting the Department.

Interested persons may submit written comments on the draft document to the Acting Assistant Director, Wastewater Facilities Management Element, at the address cited above. All comments must be submitted within 30 days of the date of this public notice. All persons, including applicants, who believe that any condition of this draft document is inappropriate or that the Department's tentative decision to issue this draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEP with respect to the permit. At the close of the public comment period, the Department will issue or deny the permit. The Department will respond to all significant and timely comments when a final decision is issued. The applicant and each person who has submitted written comments will receive notice of NJDEP's final decision.

Any interested person may request in writing that NJDEP hold a non-adversarial public hearing on the draft document. This request shall state the nature of the issues to be raised in the proposed hearing as detailed above, and shall be submitted within 30 days of the date of this public notice to the Acting Assistant Director, Wastewater Facilities Management Element, at the address cited above. A public hearing will be conducted whenever the NJDEP determines that there is a significant degree of public interest. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Additional information concerning the draft permit may be obtained between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday from: Melisse Wilusz at (609) 292-0407.

Leroy T. Cattaneo, P.E.
Acting Assistant Director
Wastewater Facilities Management

State of New Jersey
Department of Environmental Protection
Division of Water Resources
401 East State Street, CN-029
Trenton, New Jersey 08625

FACT SHEET
FOR DRAFT NJPDES PERMIT TO DISCHARGE INTO THE WATERS OF THE STATE OF NEW JERSEY

NJPDES No.
NJ0003336

Date: JUN 23 1988

Name and Address of Applicant:	United States Bronze Powders, Inc. P.O. Box 31-408 Route 202 Flemington, NJ 08822
Name and Address of Facility where Discharge Occurs:	United States Bronze Powders, Inc. 408 Route 202 Raritan Township Hunterdon County, New Jersey
Receiving Water:	Mill Creek
Classification:	FW2-NT

I. DESCRIPTION OF FACILITY

The above named applicant has applied for a New Jersey Pollutant Discharge Elimination System (NJPDES) permit, to the State of New Jersey Department of Environmental Protection, Division of Water Resources to discharge into the designated receiving water. A location map of the facility is included on page 3.

The applicant is involved in powder metal manufacturing (SIC Code 3399). The wastewater, consisting of non-contact cooling water, water softener regeneration wastewater, and stormwater with an average flow rate of 6154 GPD is treated by settling and oil skimming prior to discharge to the receiving stream. All process and sanitary wastewater is routed to the Raritan Township Regional Utilities Authority system.

05

II. DESCRIPTION OF DRAFT PERMIT CONDITIONS

The existing and proposed effluent limitations and other pertinent information regarding the draft permit are described in the Permit Summary Table (page 4). Also included is a brief summary of the basis for each effluent limitation and other conditions in the draft permit (page 5).

III. VARIANCE OR MODIFICATION (if applicable)

N/A

IV. PROCEDURES FOR REACHING A FINAL DECISION ON THE DRAFT PERMIT

These procedures are set forth in N.J.A.C. 7:14A-7.1 et seq.. Included in the public notice are requirements for the submission of comments by a specified date, procedures for requesting a hearing and the nature of the hearing, and other procedures for participation in the final agency decision.

V. NJDEP CONTACT

Additional information concerning the Draft Permit may be obtained between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday from: Melisse Wilusz, Industrial Permits Section, at (609)292-0407.

Q6

PERMIT SUMMARY TABLE

Company: U.S. Bronze Powders, Inc.

Permit#:NJ0003336

Discharge#:001
Non-contact cooling water and stormwater

Lat: 40° 30' 21"

Ave. Flow: 8966 GPD

Long: 74° 50' 31"

Max. Flow: 18,000 GPD

Parameter	Jan. 31, 1988 Application	DMRs 11/84-1/88 Files Avg.	DMRs 11/84-1/88 Files Max.	Existing Permit Condition Dry/Wet	Water Quality Based Limits	Technology Based Limits	Draft Permit Limits
Flow (GPD)	6154	8966	18,000	Monitor			Monitor
Temperature (°C)	winter 9.4 summer 15	15.7	28.6	30			30
Chemical Oxygen Demand (mg/l)	19	26.8	170	50/100			100
Total Suspended Solids (mg/l)	10	19.9	78	Monitor			50
pH Range (S.U.)	6.4-8.3	6.4	8.4	6.0-9.0			6.0-9.0
Petroleum Hydrocarbons (mg/l)	15	5.7	37	10/15			10/15
Copper (µg/l)	NR	1144	4700	1000	14		14
Chromium (µg/l)	NR	96	700	500	50		50
Zinc (µg/l)	NR	571	2600	1000	97		97
Total Dissolved Solids (mg/l)	NR	1351.5	5200	Monitor	500		500
Acute Toxicity						No measurable acute toxicity(1)	

(1) Less than 10% mortality in all concentrations including 100%

NR=Not Reported

EJ

Let's protect our earth

Enforcement NORTHERN Region
Joseph M. Mikulka

HM
HK
SC

RECEIVED BY
N.J. DEPARTMENT OF
ENVIRONMENTAL PROTECTION
BUREAU OF ENFORCEMENT

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

CN 029
Trenton, N.J. 08625-0029

Office of
the Director

(609) 292-1637
Fax # (609) 984-7938

Niels Nielson
U.S. Bronze Powders, Inc.
P.O. Box 31, Route 202
Flemington, New Jersey 08822-0031

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

FEB 2 8 1991

Dear Mr. Nielson:

RE: Treatment Works Approval, Permit No. 90-4973-4L
U.S. Bronze, Flemington

Enclosed is a Treatment Works Approval (TWA): Construction and Operation permit issued pursuant to Title 58 of the Revised Statutes of New Jersey and in consideration of your TWA application dated October 25, 1990 and certified by Mr. Michael A. Zavoda, P.E., of Applied Wastewater Technology, Inc.

This permit is for Construction and Operation of the proposed treatment works pertaining to 10 L.F. of 4 inch sanitary sewer extension to discharge process wastewater into Raritan Township Municipal Utilities Authority sewer treatment plant.

Within thirty (30) days of completion of the project, two (2) executed copies of the certification of approval, Form number WQM-005 (enclosed), shall be submitted to the appropriate Collection and/or Treatment Authority/Municipality or both as the case may warrant for their approval prior to operation. One executed copy approved by the Authority/Municipality shall be forwarded to:

Bureau of Industrial Discharge Permits
Wastewater Facilities Management Element
401 East State Street, Floor# 4,
CN-029
Trenton, New Jersey 08625

Q8

Notice of Authorization

PERMIT NO.	ISSUANCE DATE	EFFECTIVE DATE	EXPIRATION DATE
0-4973-4L	2/28/91	2/28/91	2/27/93

ISSUED TO	FOR ACTIVITY/FACILITY AT	OWNER
.S. Bronze Powders,Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders,Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders,Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

ISSUING DIVISION	TYPE OF PERMIT	STATUTE(S)	APPLICATION NO.
ater Resources	Treatment Works Approval for Sanitary Sewer Extension	N.J.S.A. 58:10A-1 et seg.	

A PERMIT TO
Construct and Operate

onstruct and operate the sanitary sewer extension as proposed in the application dated October 25, 1990, consisting of 10 L.F. of 4 inch sanitary sewer extension to serve U.S. Bronze Powders, Inc. located 0.5 Miles North of lemington Circle, Flemington, New Jersey 08822

Narinder K. Ahuja
DEP AUTHORIZATION

Narinder K. Ahuja, P.E., Bureau Chief

P-008
/88)

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.

New Jersey Department of Environmental Protection

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT TO CONSTRUCT AND OPERATE*
TREATMENT WORKS

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

PERMIT NO.	ISSUANCE DATE	DESIGN FLOW
90-4973-4L	February 28, 1991	.007990 MGD Additional Flow

NAME AND ADDRESS OF APPLICANT	LOCATION OF ACTIVITY/FACILITY	NAME AND ADDRESS OF OWNER
U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders, Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders,Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

This permit grants permission to:

Construct and operate 10 L.F. of 4 inch sanitary sewer extension to serve U.S. Bronze Powders, Inc. located at 0.5 Miles North of Flemington Circle, Flemington, New Jersey, 08822 according to the Sanitary Sewer Extension application package dated October 25, 1990.

according to plans identified as:

See special proviso item 1 below

and according to specifications entitled:

See special proviso item 2 below

bearing the raised seal of: Michael A. Zavoda, P.E. of Applied Wastewater Technology, Inc.;

hereinafter designated by the expression "the treatment works"

This approval shall be subject to compliance with all general conditions stated on the reverse of this Form WQM-004, and with all SPECIAL PROVISOS stated hereinafter, and is limited to the system shown in the plans and specifications specified below.

Page #1 --permit is continued on next page

* *Local Agency approval required prior to operation*

EXPIRATION DATE: This permit shall expire if construction is not initiated by

Approved by the Department of Environmental Protection

_____ _____
Date

(General Conditions are on the Reverse Side)

Q10

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT TO CONSTRUCT AND OPERATE*
TREATMENT WORKS

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

PERMIT NO.	ISSUANCE DATE	DESIGN FLOW
90-4973-4L	February 28, 1991	.007990 MGD Additional Flow

NAME AND ADDRESS OF APPLICANT	LOCATION OF ACTIVITY/FACILITY	NAME AND ADDRESS OF OWNER
U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders, Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

This permit grants permission to:

SPECIAL PROVISOS

1. The drawings hereby approved are two (2) sheets prepared by Applied Wastewater Technology Inc., dated October 12, 1990, unless noted otherwise, entitled;

   "Blowdown and Backwash Connection to Sanitary Sewer", Job No. 90-824, sheets 1 and 2 of 2.

2. The specifications hereby approved are prepared by Applied Wastewater Technology Inc., dated October 29, 1990, unless noted otherwise, entitled; "Construction Specifications for Blowdown and Backwash Connection to Sanitary Sewer".

3. That the Department's review of the treatment works has been limited to engineering features of significance to effluent limitations and/or other requirements for protection of the environment which are contained in any existing applicable New Jersey Pollutant Discharge Elimination System (NJPDES) permit(s) and/or stated to be applicable in the treatment works approval application. The full responsibility for adequate design, construction, and operation of the treatment works and the full responsibility for successful collection, treatment, and discharge of pollutants shall be on the applicant and/or permittee, as appropriate.

Page #2 --permit is continued on next page

* *Local Agency approval required prior to operation*

EXPIRATION DATE: This permit shall expire if construction is not initiated by

Approved by the Department of Environmental Protection

_____ _____
Date

(General Conditions are on the Reverse Side)

Q11

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT TO CONSTRUCT AND OPERATE*
TREATMENT WORKS

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

PERMIT NO.	ISSUANCE DATE	DESIGN FLOW
90-4973-4L	February 28, 1991	.007990 MGD Additional Flow

NAME AND ADDRESS OF APPLICANT	LOCATION OF ACTIVITY/FACILITY	NAME AND ADDRESS OF OWNER
U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders, Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

This permit grants permission to:

4. That approval of the design adequacy of the treatment works to attain compliance with all applicable Federal, State, interstate and local effluent limitations and/or regulatory requirements is based upon the certification of the New Jersey Licensed Professional Engineer(s) affixing his/her/their seal(s) on the plans and specifications.

5. That this approval to construct and operate the treatment works does not exempt nor shall be construed to exempt the applicant from compliance with rules, regulations, policies, and/or laws lodged in any agency or subdivision of this State having legal jurisdiction, nor shall it constitute a defense in any action resulting from failure to identify and comply with applicable requirements.

6. That pursuant to N.J.A.C. 7:7A-2.1(e), if the planned project would entail construction or removal of any device or structure in any area which encompasses wetlands as delineated on the U.S. Fish and Wildlife Service National Wetlands Inventory mapping, the applicant shall obtain an approval or a letter of non-jurisdiction from the Division of Coastal Resources - Office of Freshwater Wetlands (OFW) prior to the initiation of construction on any part of the property so delineated and the viability of this project shall be dependent upon a favorable determination under the regulations implementing the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.).

Page #3 --permit is continued on next page

* *Local Agency approval required prior to operation*

EXPIRATION DATE: This permit shall expire if construction is not initiated by

Approved by the Department of Environmental Protection

_____ _____
Date

(General Conditions are on the Reverse Side)

Q12

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT TO CONSTRUCT AND OPERATE*
TREATMENT WORKS

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

PERMIT NO.	ISSUANCE DATE	DESIGN FLOW
90-4973-4L	February 28, 1991	.007990 MGD Additional Flow

NAME AND ADDRESS OF APPLICANT	LOCATION OF ACTIVITY/FACILITY	NAME AND ADDRESS OF OWNER
U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders, Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

This permit grants permission to:

7. That no construction is to take place in floodplains or in the area of stream crossings until such time as a Stream Encroachment permit, if required pursuant to the provisions of N.J.S.A. 58:16A-50 et seq. and the regulations adopted for implementation of same, or a determination of non-jurisdiction is issued by the Division of Coastal Resources.

8. That the owner/operator shall bear responsibility for compliance with any and all applicable requirements of N.J.A.C. 7:14A Subchapter 4 and/or N.J.A.C. 7:26-1.1 et seq. which regulate treatment, disposal and storage of hazardous wastes including wastewaters and treatment residues and residuals and/or of N.J.A.C. 7:14 Subchapter 4 which regulates sludges.

9. That if any provision of this approval or the application hereof to any person or circumstances is stayed because of challenge or is held invalid, such stay or invalidity shall not effect other provisions or applications, and to this end the provisions of this approval are declared severable.

10. That the permittee shall comply with provisions of a NJPDES/SIU Permit-by-rule which are stated or referenced at N.J.A.C. 7:14A-13.5. and shall apply for and individual NJPDES/SIU Permit if and when required by the Department.

Page #4 --permit is continued on next page

* *Local Agency approval required prior to operation*

EXPIRATION DATE: This permit shall expire if construction is not initiated by

Approved by the Department of Environmental Protection

_____ _____
Date

(General Conditions are on the Reverse Side)

Q1

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT TO CONSTRUCT AND OPERATE*
TREATMENT WORKS

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

PERMIT NO.	ISSUANCE DATE	DESIGN FLOW
90-4973-4L	February 28, 1991	.007990 MGD Additional Flow

NAME AND ADDRESS OF APPLICANT	LOCATION OF ACTIVITY/FACILITY	NAME AND ADDRESS OF OWNER
U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders, Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

This permit grants permission to:

11. That no physical connection(s) shall be installed or permitted to exist between any unit or pipeline of any public potable water system and any unit or pipeline into or through which wastewater or effluent discharges or may discharge.

12. That all the manholes shall be watertight.

13. That the owner/operator shall submit to the appropriate persons/agencies all reports required pursuant to 40 CFR 403.12 to the receiving POTW regarding any discharge which may cause problems to the POTW (See 40 CFR 403.12(f), Notice of Potential Problems).

14. That this TWA is revocable and subject to modification according to N.J.A.C. 7:14A-2.12; N.J.A.C. 7:14A-12.6 and/or as provided in General Condition 1.

15. That any condition of this TWA may be appealed within the time specified at N.J.A.C. 7:1C-1.9(b). If no timely appeal is received by this Department, this approval shall be considered a final action.

Page #5 --permit is continued on next page

* *Local Agency approval required prior to operation*

EXPIRATION DATE: This permit shall expire if construction is not initiated by

Approved by the Department of Environmental Protection

_____ _____
Date

(General Conditions are on the Reverse Side)

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT TO CONSTRUCT AND OPERATE*
TREATMENT WORKS

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

PERMIT NO.	ISSUANCE DATE	DESIGN FLOW
90-4973-4L	February 28, 1991	.007990 MGD Additional Flow

NAME AND ADDRESS OF APPLICANT	LOCATION OF ACTIVITY/FACILITY	NAME AND ADDRESS OF OWNER
U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822	U.S. Bronze Powders, Inc. 202 Northbound 0.5 Miles North of Flemington Circle Flemington, NJ 08822	U.S. Bronze Powders, Inc. P.O. Box 31, Route 202 Flemington, NJ 08822

This permit grants permission to:

16. That the owner/operator of the treatment works shall at all times maintain it in good working order and operate as efficiently as possible all treatment works facilities for collection and treatment which are installed or used by said owner/operator for water pollution control and abatement and to achieve compliance with applicable standards. No treatment units shall be bypassed except in conformance with N.J.A.C. 7:14A-3.10(b), 40 CFR 403.17, and/or other applicable regulatory and/or permit requirements. Discharge shall comply with requirements issued by Raritan Township Municipal Utilities Authority. The permittee shall request modification of this approval if necessary to achieve such compliance.

17. That the permittee shall comply with all effluent limitations and conditions of Raritan Township Municipal Utilities Authority.

(Discharges to South Branch of the Raritan River via Raritan Township Municipal Utilities Authority.)

/ Richard Yue
Richard Yue, Review Officer

Page--#6 this is the final page

* *Local Agency approval required prior to operation*

EXPIRATION DATE: This permit shall expire if construction is not initiated by

Approved by the Department of Environmental Protection
By the Authority of:
Office of the Director
Division of Water Resources

Narinder K. Ahuja
Narinder K. Ahuja, P.E., Bureau Chief

February 28, 1991
Date

WQM-004 (1/89)

(General Conditions are on the Reverse Side)

Q15

1/87

TWA DISTRIBUTION FORM

Reviewer Richard Yue

Section SIU Permits

Applicant U.S. Bronze Powders, Inc.
Route 202 Northbound
Flemington, NJ 08822

Permit # 90-4973-42

Date Mailed FEB 28 1991

County Hunterdon

Discharge Category Code 1

Recipient	TWA	Cover Letter	Other	Addresses/Remarks
Central File	X	X		
Applicant	X	X		U.S. Bronze Powders, Inc. Route 202 Northbound Flemington, NJ 08822
Applicant's Agent				Michael A. Zavoda Applied Wastewater Technology, Inc. P.O. Box 1079 Belle Mead, NJ 08502
Mayor Borough	X	X		Herman C. Kapp 38 Park Avenue Flemington, NJ 08822
Planning Board				
Health Board				
Sewerage Authority (Specify)	X	X		Raritan Township MUA P.O. Box 387 Flemington, NJ 08822 Attn: Mr. Robert G. Sobeck
Enforcement Northern Region	X	X		Chief Joseph M. Mikulka
Technical Reviewer	X	X		Richard Yue
Bureau's Chron File	X	X		
Bureau of Const. & Connection	X	X		John Marelli
Dirk Hofman	X	X		WWFT

Q16

Northern Eif
Sharon - more violations to penalize Elem. Gr. Sr

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Office of the Director

(609) 292-1637
Fax # (609) 984-7938

FEB 04 1991

Mr. Bruce K. Klotz, Project Engineer
United States Bronze Powders, Incorporated
P.O. Box 31, Route 202
Flemington, New Jersey 08822-0031

Dear Mr. Klotz:

RE: NJPDES/DSW Permit No. NJ0003336
Response to 30-Day Notice of October 3, 1990

The Department of Environmental Protection (Department) acknowledges receipt of your letter, dated October 13, 1990, which was submitted in response to the Department's 30-Day Notice of October 3, 1990. That notice cited the non-submittal of required Toxicity Reduction Evaluation (TRE) progress reports for February 1990, May 1990 and August 1990, and the non-submittal of acute toxicity tests which were required to be conducted on a monthly basis since May 1989.

The Department acknowledges receipt of the TRE progress reports for February 1990, May 1990 and August 1990, which were submitted with the Discharge Monitoring Reports (DMR's) for those time periods. However, pursuant to Part IV - B/C, 4.6. of the final permit, two copies of all written submissions related to the TRE should have been sent to the following address:

Industrial Biomonitoring Program
Bureau of Industrial Waste Management
Division of Water Resources
CN-029
Trenton, New Jersey 08625

Therefore, all future TRE progress reports shall be submitted to the above mentioned address. Please note that the next quarterly TRE progress report is to be submitted to the Department in January 1991 (ie. 3 months from the date of the TRE progress report submitted in the October 19, 1990 letter), and every 90 days thereafter until completion of the TRE, in accordance with the final permit.

ATTACHMENT R

JR

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 ROUTE 46, BUILDING 2
PARSIPPANY, NEW JERSEY 07054

NOV 03 1989

Bruce Klotz, Plant Engineer
U.S. Bronze Powders, Incorporated
P.O. Box 21, Route 202
Flemington, New Jersey 08822

Dear Mr. Klotz:

Re: Compliance Sampling
U.S. Bronze Powders, Incorporated
NJPDES Permit No.: NJ0003336
Class: MAJ-IND-DSW
Raritan Township, Hunterdon County

On May 4, 1989, wastewater samples (grabs) were obtained from the U.S. Bronze Powders, Incorporated wastewater treatment plant. Enclosed are laboratory results of these samples.

If you have any questions, you may contact me at (201) 299-7592.

Very truly yours,

Joan Reguinaker for

Deborah M. Linton
Environmental Specialist
Surface Water and Sewer System
Enforcement
Northern Bureau of Regional
Enforcement

DL:emc

Enclosure

R1

New Jersey State Department of Health
Public Health and Environmental Laboratories
CN 361, Trenton, NJ 08625-0361

AQUEOUS SAMPLE ANALYSIS REQUEST

Lab Sample Number

☒ Routine (0) ☐ Priority (2) ☐ Emergency (1)

SAMPLE INFORMATION

Sampling Point/Station Identification Number: NJ DDD 3336 BD1

Sampling Site/Facility/Supply/Location: U.S. Bronze Powders

Stream: Mill Creek

Municipality: Raritan Twp.

County: Hunterdon

Collection Date (MM/DD/YY): 5/4/89

Collection Time (Military): 9:45 AM

Sample Type
- ☐ Stream/Surface
- ☐ Sewage ☐ Raw ☐ Effluent
- ☒ Industrial ☐ Raw ☒ Effluent
- ☐ Ground Water
- ☐ Potable-Raw
- ☐ Potable-Finished
- ☐ Private Well
- ☐ Ocean/Saline
- ☐ Other

Field Sample Number: 51832

Chain of Custody ☒ Yes ☐ No

Data Package ☒ Tier II ☐ Tier I

Retain Sample ☐ Yes ☒ No

AGENCY INFORMATION

Submitting Agency: NJDEP - DWR - NBRE

Sample Collector: J. Christides

Street Address: 1259 Rt 46, Bldg #2

DEP Agency No.: 222

DEP Project Code: A7VP

City, State, Zip Code: Parsippany, NJ 07054

Comments: Oil-Water Separator

Field Information

Water Temp °C (P00010)	15.5	Stream Flow-CFS (P00061)	
Do-Winkler (P00300)		Gage Height-Ft. (P00065)	
Do-Probe (P00299)		Spec. Cond. @ 25°C (P00095)	
pH (Field) (P00400)	~6-7	Salinity (P00480)	
Sample Depth Ft. (P00003)		Tide Stage (P70211)	

ANALYSIS REQUESTS

BACTERIOLOGY

Bact. Lab. Sample No.

Date Received

- ☐ Fecal Coli (MPN)
- ☐ Fecal Coli (MF)
- ☐ Fecal Streptococci (MPN)
- ☐ Tot. Coli (MPN)
- ☐ Tot. Coli (MF)

DILUTIONS REQUESTED

Fecal Coli / Total Coli	10	1	-1 10	-2 10	-3 10	-4 10	-5 10	-6 10
Fecal Strep.	10	1	-1 10	-2 10	-3 10	-4 10	-5 10	-6 10

NUTRIENTS

- ☐ NO2-N (NANO2N)
- ☐ NO2 + NO3-N (NANO3N)
- ☐ NH3-N (NANH3N)
- ☐ TKN (NATKN)
- ☐ ORTHO-P (NAOP)
- ☐ TOTAL-P (NATP)

DEMANDS

- ☒ COD (COD)
- ☐ TOC (DATOC)
- ☐ BOD5 (BOD5)
- ☐ CBOD5 (CBOD5)
- ☐ BOD20 (BOD2)
- ☐ CBOD20 (CBOD2)

BOD DILUTIONS REQUESTED

BOD_5			
$CBOD_5$			
BOD_{20}			
$CBOD_{20}$			

RESIDUES

- ☒ Non-Filterable Residue (RASS)
- ☐ Total Residue (RATS)
- ☒ Filterable Residue (RATDS)
- ☐ Non-Filterable Volatile Residue (RAVSS)
- ☐ Total Volatile Residue (RAVTS)
- ☐ Filterable Volatile Residue (RAVDS)
- ☐ Settable Matter (RASM)

GENERAL

- ☐ Color (GAC)
- ☐ Odor (GAO)
- ☐ Turbidity (GAT)
- ☐ PH (GAPH)
- ☐ Alkalinity (GAALK)
- ☐ Acidity (GAACID)
- ☒ Chloride (GACL)
- ☐ MBAS (GAMBAS)
- ☐ Phenols (SSI) (GAPHE)
- ☐ Phenols (PW) (GAPHEK)
- ☐ Hardness (GAHARD)
- ☐ Sulfate (GASO4)
- ☐ Oil & Grease (GAOG)
- ☒ Petroleum Hydrocarbons (GAPHC)
- ☐ Cyanide (GACN)
- ☐ Conductance (GACOND)
- ☐ Dissolved Oxy. (GADO)
- ☐ Fluoride (GAF)
- ☐ Fluoride w/Dist. (GAFD)
- ☐ Silica (GASI)
- ☐ Sulfide (GAS)

METALS

- ☐ Ag (MAAG)
- ☐ Al (MAAL)
- ☐ As (MBAS)
- ☐ Ba (MABA)
- ☐ Be (MABE)
- ☐ Ca (MACA)
- ☐ Cd (MACD)
- ☐ Cr-H (MACRH)
- ☒ Cr-T (MACR)
- ☐ Co (MACO)
- ☒ Cu (MACU)
- ☐ Fe (MAFE)
- ☐ Hg (MAHG)
- ☐ K (MAK)
- ☐ Mg (MAMG)
- ☐ Mn (MAMN)
- ☐ Na (MANA)
- ☐ Ni (MANI)
- ☐ Pb (MAPB)
- ☐ Sb (MASB)
- ☐ Se (MASE)
- ☐ Sn (MASN)
- ☐ Tl (METI)
- ☐ Tl (METL)
- ☒ Zn (MAZN)

ORGANICS

- ☐ EPA 601 (VO601)
- ☐ EPA 602 (VO602)
- ☐ EPA 612 (VO612)*
- ☐ EPA 624 (VO624)*
- ☐ EPA 625 (VO625)
- ☐ EPA 625 Base Neut. only (M625B)
- ☐ EPA 625 Acids only (M625A)
- ☐ EPA 503.1 (VO503)*
- ☐ PEST 1 Organochlorines and PCB's*
- ☐ PEST 2 Organophosphates
- ☐ PEST 3 Herbicides
- ☐ PEST 4 Drinking Water
- ☐ PCB's Only

OTHER

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐

*A280 Analysis

CHEM-44
FEB-87

Distribution: White-Submitting Agency; Canary-Chem. Lab. Central File; Pink-Bacteriology Lab; Gold-Sample Collector

P8912

R2

Public Health and Environmental Laboratories

AQUEOUS GENERAL CHEMISTRY RESULTS

Lab. Sample No. 51832

Analysis (1)	Sample Result	Method Blank	MDL
Nitrite Nitrogen (P00615)			0.003
Nitrite & Nitrate Nitrogen (P00630)			0.05
Ammonia Nitrogen (P00610)			0.05
Total Kjeldahl Nitrogen (P00625)			0.05
Ortho Phosphorus (P70507)			0.01
Total Phosphorus (P00665)			0.02
Non-Filterable Residue (P00530)	1		2
Total Residue (P00500)			2
Filterable Residue (P70300)	463		2
Non-Filterable Volatile Residue (P00535)			2
Total Volatile Residue (P00505)			2
Filterable Volatile Residue (P00520)			2
Settleable Matter in ml/l/hr (P50086)			0.2
COD - std (P00340)			50
COD - Low (P00335)	16		5
COD - High Chloride (P00340)			250
TOC (P00680)			0.1

Analysis (1)	Sample Result	Dilutions				MDL
BOD_5 (P00310)		% Conc.				
		+/-				
$CBOD_5$		% Conc.				
		+/-				
BOD_{20}		% Conc.				
		+/-				
CBOD20		% Conc.				
		+/-				

Analysis (1)	Sample Result	Method Blank	MDL
Color in Platinum - Cobalt Units (P00080)			5
Odor			1
Turbidity in NTU (P00067)			0.1
pH in pH Units (P00403)			—
Alkalinity (P00410)			1
Acidity (P00436)			1
Chloride (P00940)	39.5		0.5
MBAS (P38260)			0.1
Phenols (SSI) (P32730)			0.05
Phenols (pw) (P32730)			0.005
Hardness (P00900)			2
Sulfate (P00945)			1
Oil & Grease (P00556)			5
Petroleum Hydrocarbons (P45510)	1K		1
Cyanide (P00720)			0.001
Conductance in umhos (P00095)			0.1
Dissolved Oxygen (P00300)			0.2
Fluoride (P00951)			0.1
Fluoride with distillation (P00951)			0.1
Silica (P00955)			2
Sulfide (P00745)			1

NOTE: Sample results, method blank results and MDL's are expressed in parts per million (ppm), unless otherwise specified.

REPORT SUBMITTED

Name of Supervisor - Print	Signature	Date

CHEM-45
Dec 88

DISTRIBUTION: WHITE - Submitting Agency CANARY - Chemistry - Central File

*G0431

R3

PUBLIC HEALTH AND ENVIRONMENTAL LABORATORIES

METAL ANALYSIS RESULTS

Laboratory Sample Number
51832

ANALYSIS	Sample Concentration (ppb)	Minimum Detection Level (ppb)	Method Blank Result (ppb)
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium, Hexavalent			
Chromium, Total	5 K		
Cobalt			
Copper	148		
Iron			
Lead			
Magnesium			
Manganese			
Mercury			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Titanium			
Tin			
Zinc	119		

REPORT SUBMITTED

Supervisor (Print)	Signature	Date

CHEM-14
MAY 86

DISTRIBUTION: White - Sub Agency
Canary - Cont. File
Pink - Metals Lab

CHEMISTRY LABORATORY PS221

R4

5-5

Form DEP-009
1/81

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON, NEW JERSEY 08625

CHAIN OF CUSTODY RECORD

NAME OF UNIT AND ADDRESS:

NJDEP - DWR - NBRE, 1259 Rt 46, Bldg #2, Parsippany, NJ 07054

SAMPLE NUMBER	Number of Containers	DESCRIPTION OF SAMPLES
51832 ✓	~~[illegible]~~ 4 dup	COD (500); TSS ~~(250)~~ dup; Pet HC (1000); ~~Cr (500)~~; ~~Cr-T (500)~~ dup; ~~Zn (500)~~; TDS ~~(250)~~ 500 ml dup; Zn & Cu (1 liter)

JUN - 8

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE: J. Churbakis — TIME: 945 — DATE: 5/4/89

SAMPLE NUMBER	RELINQUISHED BY:	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
51832	J. Churbakis	[illegible]	1p	5/4/89	Transport Samples.
51832	[illegible]	M. Egantus	1020	5-8-89	SS
51832	[illegible]	Nancy Mann	3:05	5-8-89	Chloride
51832	[illegible]	M. Egantus	900	5-9-89	TDS
51832	[illegible]	A. De Latto	1030	5/9/89	COD
51832	[illegible]	M Poinsett	930	5-10-89	Cr, Cu, Zn
51832	[illegible]	D. Lawson	930	5-10-89	Pet. Hydrocarbon

REPORT [illegible]
JUN 02 [illegible]
[illegible] CHEMISTRY LABORATORY

R5

ATTACHMENT S

RECON SYSTEMS, INC.

Route 202 North, P.O. Box 460
Three Bridges, N.J. 08887-0460
201-782-5900

JUL 19 1990

New England 508-752-4217 Pennsylvania 215-433-5511
Connecticut 203-293-1212 New Hampshire 603-431-7500
FAX 201-782-0072

July 16, 1990

Mr. Bruce Klotz
US BRONZE POWDERS, INC.
PO Box 31
Flemington, NJ 08822

JUL 19 1990

Re: RECON Project No. 2838

Dear Mr. Klotz:

Enclosed please find the RECON analysis report with the results for samples that were collected from the stream along your property on May 11, 1990. These results covers the sampling required for the April - June, 1990 quarter. There had been a total of 0.8 inches of rainfall just prior to sampling.

We will continue to monitor the stream quarterly and advise you of any changes that occur. If you have any questions please do not hesitate to contact us at 201-782-5900.

Sincerely,

Dewey J. Sanders
Environmental Specialist

Approved By:

Patrick J. Mulrooney
Vice President

DJS/klo

cc: D. Reid-Green - RECON SYSTEMS, Inc.

attachments

cc: [redacted]

(AR#21 - 2838.LET)

S1

RECON SYSTEMS INC.

ROUTE 202N, P.O. BOX 460, THREE BRIDGES, N.J. 08887-0460
201-782-5900 FAX 201-782-0072

NEW ENGLAND 508-752-4217 PENNSYLVANIA 215-433-5511 CONNECTICUT 203-293-1212

ANALYSIS REPORT

May 25, 1990

TO: U. S. BRONZE POWDERS INC.

ATTN: J. D. Kirby
RECON Project No. 2838

Sample: Surface water, sampled 5/11/90 in Flemington, NJ

RECON Sample No.	20516	20517	
Sample ID.	Upstream	Downstream	Detection Limit
Parameter			
pH	7.22	6.40	-
	mg/l		
Sulfate	21.0	24.3	1.0
Copper	0.012	0.016	0.008

mg/l = milligrams per liter

Samples for this project will be retained for sixty (60) days from the date of this report unless otherwise directed.

Submitted By: G. Stephen Hornberger
Manager, Inorganic Laboratory

Approved By: Patrick J. Mulrooney
Vice President

GSH/lej

(AR#21 - AR2838)

New Jersey State Certified Water Laboratory
Certification No. 10196

S2

ATTACHMENT T

Let's protect our earth

LM

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 Route 46, Building 2
Parsippany, New Jersey 07054

(201) 299-7592
Fax # (201) 299-7719

MAY 10 1991

United States Bronze Powders, Incorporated
P.O. Box 31
Route 202
Flemington, New Jersey 08822-0031

Dear Permittee:

Re: NJDEP Conducted Grab Sampling
U.S. Bronze Powders, Incorporated
NJPDES No.: NJ0003336
Raritan Borough, Hunterdon County

Enclosed you will find copies of analytical data obtained from grab samples taken by the New Jersey Department of Environmental Protection at your facility on June 20, 1990. Sample result units are milligrams per liter unless otherwise noted.

Should you have questions pertaining to this information, please do not hesitate to contact me at (201) 299-7592.

Very truly yours,

Lisa Moor

Lisa Moor
Senior Environmental Specialist
Surface Water and Sewer
System Enforcement
Northern Bureau of Regional
Enforcement

LM

Enclosure

T1

51928 QUEOUS SAMPLE ANALYSIS REQUEST

☒ Routine (9) ☐ Priority (2) ☐ Emergency (1)

SAMPLE INFORMATION

Sampling Point/Station Identification Number: NJ0005336

Sampling Site/Facility/Supply/Location: U.S Bronze Powders

Stream: Mill Creek

Municipality: Raritan

County: Hunterdon

Collection Date (MM/DD/YY): 6/20/90

Collection Time (Military): 1200

Sample Type
- ☐ Stream/Surface
- ☐ Sewage ☐ Raw ☐ Effluent
- ☒ Industrial ☐ Raw ☒ Effluent
- ☐ Ground Water
- ☐ Potable-Raw
- ☐ Potable-Finished
- ☐ Private Well
- ☐ Ocean/Saline
- ☐ Other

Field Sample Number: 51928

Chain of Custody ☒ Yes ☐ No

Data Package ☒ Tier II ☐ Tier I

Retain Sample ☐ Yes ☒ No

AGENCY INFORMATION

Submitting Agency: NJDEP-DWR-NBRE

Sample Collector: Lisa Moore

Street Address: 1259 Route 46 Bldg. 2

DEP Agency No.: 222

DEP Project Code: INS

City, State, Zip Code: Parsippany, NJ 07054

Comments:

Field Information

Water Temp °C (P00010)	21 °C	Stream Flow-CFS (P00061)	
Do-Winkler (P00300)		Gage Height-Ft. (P00065)	
Do-Probe (P00299)		Spec. Cond. @ 25°C (P00095)	
pH (Field) (P00400)	≈ 7.0 SU	Salinity (P00480)	
Sample Depth Ft. (P00003)		Tide Stage (P70211)	

ANALYSIS REQUESTS

BACTERIOLOGY

Bact. Lab Sample No.

Date Received

- ☐ Fecal Coli (MPN)
- ☐ Tot. Coli (MPN)
- ☐ Fecal Coli (MF)
- ☐ Tot. Coli (MF)
- ☐ Fecal Streptococci (MPN)

DILUTIONS REQUESTED

Fecal Coli / Total Coli	10	1	-1 10	-2 10	-3 10	-4 10	-5 10	-6 10
Fecal Strep.	10	1	-1 10	-2 10	-3 10	-4 10	-5 10	-6 10

NUTRIENTS

- ☐ NO2-N (NAN02N)
- ☐ NO2 + NO3-N (NAN03N)
- ☐ NH3-N (NANH3N)
- ☐ TKN (NATKN)
- ☐ ORTHO-P (NAOP)
- ☐ TOTAL-P (NATP)

DEMANDS

- ☒ COD 1 PP (COD)
- ☐ TOC (TOC)
- ☐ BOD5 (BOD5)
- ☐ CBOD5 (CBOD5)
- ☐ BOD20 (BOD2)
- ☐ CBOD20 (CBOD2)

BOD/CBOD DILUTIONS REQUESTED

BOD_5			
$CBOD_5$			
BOD_{20}			
$CBOD_{20}$			

REJECTION OF SAMPLE REQUESTED Do not release until written notification is received from D.E.P.

RESIDUES

- ☒ Non-Filterable Residue (RASS)
- ☐ Total Residue (RATS)
- ☒ Filterable Residue (RAFDS) ppm
- ☐ Non-Filterable Volatile Residue (RAVSS)
- ☐ Total Volatile Residue (RAVTS)
- ☐ Filterable Volatile Residue (RAVDS)
- ☐ Settable Matter (RASM)

GENERAL

- ☐ Color (GAC)
- ☐ Odor (GAO)
- ☐ Turbidity (GAT)
- ☐ PH (GAPH)
- ☐ Alkalinity (GAALK)
- ☐ Acidity (GAACID)
- ☒ Chloride (GACL)
- ☐ MBAS (GAMBAS)
- ☐ Phenols (SSI) (GAPHE)
- ☐ Phenols (PW) (GAPHEX)
- ☐ Hardness (GAHARD)
- ☐ Sulfate (GASO4)
- ☐ Oil & Grease (GAOG)
- ☒ Petroleum Hydrocarbons (GAPHC)
- ☐ Cyanide (GACN)
- ☐ Conductance (GACOND)
- ☐ Dissolved Oxy. (GADO)
- ☐ Fluoride (GAF)
- ☐ Fluoride w/Dist. (GAFD)
- ☐ Silica (GASI)
- ☐ Sulfide (GAS)

METALS

- ☐ Ag (MAAG)
- ☐ Al (MAAL)
- ☐ As (MBAS)
- ☐ Ba (MABA)
- ☐ Be (MABE)
- ☐ Ca (MACA)
- ☐ Cd (MACD)
- ☐ Cr-H (MACRH)
- ☒ Cr-T (MACR)
- ☐ Co (MACO)
- ☒ Cu (MACU)
- ☐ Fe (MAFE)
- ☐ Hg (MAHG)
- ☐ K (MAK)
- ☐ Mg (MAMG)
- ☐ Mn (MAMN)
- ☐ Na (MANA)
- ☐ Ni (MANI)
- ☐ Pb (MAPB)
- ☐ Sb (MBSB)
- ☐ Se (MBSE)
- ☐ Sn (MBSN)
- ☐ Tl (MBTI)
- ☐ Tl (MBTL)
- ☒ Zn (MAZN)

ORGANICS

- ☐ EPA 601 (VO601)
- ☐ EPA 602 (V0602)
- ☐ EPA 612 (VO612)*
- ☐ EPA 624 (VO624)*
- ☐ EPA 625 (VO625)
- ☐ EPA 625 Base Neut. only (M625B)
- ☐ EPA 625 Acids only (M625A)
- ☐ EPA 503.1 (VO503)*
- ☐ PEST 1 Organochlorines and PCB's*
- ☐ PEST 2 Organophosphates
- ☐ PEST 3 Herbicides
- ☐ PEST 4 Drinking Water
- ☐ PCB's Only

OTHER

- ☐
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐ ~~Cont SU~~
- ☐
- ☐ ~~JUN 05 1990~~

*A200 Analysis

NJDOH ENVIRONMENTAL CHEMISTRY LABORATORY

CHEM-44
FEB-87

Distribution: White-Submitting Agency; Canary-Chem. Lab Central File; Pink-Bacteriology Lab; Gold-Sample Collector

P8912

T2

Public Health and Environmental Laboratories

Environmental and Chemical Laboratory Services

Lab. Batch No. _____

Lab. Sample No. 51928

AQUEOUS GENERAL CHEMISTRY RESULTS

Analysis (1)	Sample Result	Method Blank	MDL
Nitrite Nitrogen (P00615)			0.003
Nitrite & Nitrate Nitrogen (P00630)			0.05
Ammonia Nitrogen (P00610)			0.05
Total Kjeldahl Nitrogen (P00625)			0.05
Ortho Phosphorus (P70507)			0.01
Total Phosphorus (P00665)			0.02
Non-Filterable Residue (P00530)	2		2
Total Residue (P00500)			2
Filterable Residue (P70300)			2
Non-Filterable Volatile Residue (P00535)			2
Total Volatile Residue (P00505)			2
Filterable Volatile Residue (P00520)			2
Settleable Matter in ml/l/hr (P50086)			0.2
COD - std (P00340)			50
COD - Low J NPP (P00335)	20		5
COD - High Chloride (P00340)			250
TOC (P00680)			0.1

Analysis (1)	Sample Result	Dilutions				MDL
BOD_5 (P00310)		% Conc.				
		+/-				
$CBOD_5$		% Conc.				
		+/-				
BOD_{20}		% Conc.				
		+/-				
CBOD20		% Conc.				
		+/-				

Analysis (1)	Sample Result	Method Blank	MDL
Color in Platinum - Cobalt Units (P00080)			5
Odor			1
Turbidity in NTU (P00067)			0.1
pH in pH Units (P00403)			—
Alkalinity (P00410)			1
Acidity (P00436)			1
Chloride (P00940)	32.0		0.5
MBAS (P38260)			0.1
Phenols (SSI) (P32730)			0.05
Phenols (pw) (P32730)			0.005
Hardness (P00900)			2
Sulfate (P00945)			1
Oil & Grease (P00556)			5
Petroleum Hydrocarbons (P45510)	1 K		1
Cyanide (P00720)			0.010
Conductance in umhos (P00095)			0.1
Dissolved Oxygen (P00300)			0.2
Fluoride (P00951)			0.1
Fluoride with distillation (P00951)			0.1
Silica (P00955)			2
Sulfide (P00745)			1
TOX			0.005

NOTE: Sample results, method blank results and MDL's are expressed in parts per million (ppm), unless otherwise specified.

REPORT SUBMITTED

CHEM-45
Oct 89

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*G1225

AUG 03 1990

NJDOH ENVIRONMENTAL CHEMISTRY LABORATORY

T3

Laboratory Sample Number
51928

ANALYSIS	Sample Concentration (ppb)	Minimum Detection Level (ppb)	Method Blank Result (ppb)
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium, Hexavalent			
Chromium, Total	1 K		
Cobalt			
Copper	201		
Iron			
Lead			
Magnesium			
Manganese			
Mercury			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Titanium			
Tin			
Zinc	156		

REPORT SUBMITTED

AUG 03 1990

Supervisor (Print)	Signature	Date
		NJDOH ENVIRONMENTAL CHEMISTRY LABORATORY

CHEM-14
MAY 86

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Canary - Cont. File
Pink - Metals Lab

P8221

T4

Form DEP-009
1/81

6-21

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON, NEW JERSEY 08625

CHAIN OF CUSTODY RECORD

AUG 10 ... '90

NAME OF UNIT AND ADDRESS:
NJDEP-NBRE-DWR
1259 Rte 46 Bldg. 2
Parsippany, NJ 07054

SAMPLE NUMBER	Number of Containers	DESCRIPTION OF SAMPLES
51928	6	① - 1000ml glass - Pet. Hydro, ③ - 500ml - plastic - metals Cu Zn Cr ① - 500ml - plastic - COD, - ① - 500ml - TSS + Chloride

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE: L. Moore — TIME: — DATE: 6/20/90

SAMPLE NUMBER	RELINQUISHED BY:	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
51928	Lisa Moore	[illegible]	1:45	6-21-90	DOH RECEIVING AREA
51928	[illegible]	M. Evans	910	6-21-90	SS
51928	[illegible]	Bill Lawson	930	6-21-90	PHC
51928	[illegible]	[illegible]	1015	6-21-90	Cl
51928	[illegible]	M. DeFlotto	145	6/28	COD
51928	J. [illegible]	[illegible]	1000	7/16/90	Cu Zn

REPORT SUBMITTED
... 03 1990
HUDSON ENVIRONMENTAL
CHEMISTRY LABORATORY

T5

ATTACHMENT U

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 Route 46, Building 2
Parsippany, New Jersey 07054

(201) 299-7592
Fax # (201) 299-7719

Mr. Bruce Klotz, Plant Engineer
U.S. Bronze Powders, Incorporated
P.O. Box 21
Route 202
Flemington, New Jersey 08822

AUG 20 1991

Dear Mr. Klotz:

Re: NJDEP Conducted Grab Sampling
U.S. Bronze Powders, Incorporated
NJPDES No.: NJ0003336
Raritan Township, Hunterdon County

Enclosed you will find copies of analytical data obtained from grab samples taken by the New Jersey Department of Environmental Protection on April 23, 1991 at your facility. Sample result units are generally indicated on the individual analytical results sheets.

Should you have any questions concerning this information, please do not hesitate to contact me at (201) 299-7592.

Very truly yours,

Russell Polo

Russell Polo
Surface Water and Sewer
System Enforcement
Northern Bureau of Regional
Enforcement

RSP

Enclosure

U'

New Jersey State Department of Health
Public Health and Environmental Laboratories
Environmental and Chemical Laboratory Services

AQUEOUS GENERAL CHEMISTRY RESULTS

Lab. Batch No. _____

Lab. Sample No. 51754

Analysis (1)	Sample Result	Method Blank	MDL
Nitrite Nitrogen (P00615)			0.003
Nitrite & Nitrate Nitrogen (P00630)			0.05
Ammonia Nitrogen (P00610)			0.05
Total Kjeldahl Nitrogen (P00625)			0.05
Ortho Phosphorus (P70507)			0.01
Total Phosphorus (P00665)			0.02
Non-Filterable Residue (P00530)	3		2
Total Residue (P00500)			2
Filterable Residue (P70300)	484		2
Non-Filterable Volatile Residue (P00535)			2
Total Volatile Residue (P00505)			2
Filterable Volatile Residue (P00520)			2
Settleable Matter in ml/l/hr (P50086)			0.2
COD - std (P00340)	20 K		~~20~~ 50
COD - Low (P00335)			5
COD - High Chloride (P00340)			250
TOC (P00680)			0.1

Analysis (1)	Sample Result	Dilutions				MDL
BOD_5 (P00310)		% Conc.				
		+/-				
BOD_5		% Conc.				
		+/-				
BOD_{20}		% Conc.				
		+/-				
BOD20		% Conc.				
		+/-				

Analysis (1)	Sample Result	Method Blank	MDL
Color in Platinum - Cobalt Units (P00080)			5
Odor			1
Turbidity in NTU (P00067)			0.1
pH in pH Units (P00403)			—
Alkalinity (P00410)			1
Acidity (P00436)			1
Chloride (P00940)	178		0.5
MBAS (P38260)			0.1
Phenols (SSI) (P32730)			0.05
Phenols (pw) (P32730)			0.005
Hardness (P00900)			2
Sulfate (P00945)			1
Oil & Grease (P00556)			5
Petroleum Hydrocarbons (P45510)	1 K		1
Cyanide (P00720)			0.010
Conductance in umhos (P00095)			0.1
Dissolved Oxygen (P00300)			0.2
Fluoride (P00951)			0.1
Fluoride with distillation (P00951)			0.1
Silica (P00955)			2
Sulfide (P00745)			1
TOX			0.005

NOTE: Sample results, method blank results and MDL's are expressed in parts per million (ppm), unless otherwise specified.

REPORT SUBMITTED

M-45
19

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JUN 21 1991

*G1225

NJDOH ENVIRONMENTAL CHEMISTRY LABORATORY

U2

ANALYTICAL DATA REPORT PACKAGE
for the
NEW JERSEY DEPARTMENT of ENVIRONMENTAL PROTECTION
TRENTON, NEW JERSEY 08625

CASE NUMBER:

LABORATORY BATCH NUMBER: 91DWR00048

LABORATORY RECEIPT DATE: 910423.1235

TOTAL NUMBER of SAMPLES: 1

FIELD SAMPLE NUMBERS	LABORATORY SAMPLE NUMBER	DATE and TIME OF COLLECTION
51754	9100497	910423.1125

page 1 of 1 pages

LABORATORY NAME: NEW JERSEY STATE DEPARTMENT of HEALTH

NJDEP CERTIFICATION NUMBER: 11148 TRENTON FACILITY
11758 PRINCETON SOUTH FACILITY

LABORATORY MANAGER: Stephen W. Jenniss

DATE SUBMITTED: _____

title02.rpt

REPORT SUBMITTED
JUN 21 1991
[illegible] ENVIRONMENTAL
CHEMISTRY LABORATORY

4B

NEW JERSEY STATE DEPARTMENT of HEALTH
ENVIRONMENTAL and CHEMICAL LABORATORY SERVICES
METALS LABORATORY

Laboratory Sample No. 9100497 Field No: ... 51754
Collection Date: ..... 910423.1125 Receipt Date: 910423.1235
Laboratory Batch No. 91DWR00048 Report Date: JUNE 18 1991
Matrix: WATER (NON POTABLE)

Analyte	Result ug/L *	Result Qualifer	Detection Limit
Aluminum	ANR		
Antimony	ANR		
Arsenic	ANR		
Barium	ANR		
Beryllium	ANR		
Calcium *	ANR		
Cadmium	ANR		
Chromium hex.	ANR		
Chromium	2		1
Cobalt	ANR		
Copper	247		1
Iron	ANR		
Lead	ANR		
Magnesium *	ANR		
Manganese	ANR		
Mercury	ANR		
Nickel	ANR		
Potassium *	ANR		
Selenium	ANR		
Silver	ANR		
Sodium *	ANR		
Thallium	ANR		
Tin	ANR		
Zinc	135		1

* Results for Ca, Mg, K and Na are reported as mg/L.
ANR = Analyte Not Requested
J-MI = Approximate value due to matrix interferences.
J-QC = Approximate value due to quality control problems.

Comments: _____

REPORT SUBMITTED
JUN 2 . 1991
N.JDOH ENVIRONMENTAL
CHEMISTRY LABORATORY

U4

ATTACHMENT V

UNITED STATES BRONZE POWDERS, INC. APC STACK LOG

Rt. 202 - Raritan Twp PLANT I.D. 80030

EMERGENCIES AND SPECIAL PROJECTS
SECTION BUREAU OF AIR POLLUTION CONTROL

STACK NO.	CERTIFICATE NO.	DESCRIPTION OF EQUIPMENT	DATE LOGGED
1	37148	Induction melting furnace atomizing holding furnace	
2		Delete	
3		Delete	
4	G	bronze atomization	
5	G	clean up system	
6	G	(5) dumping & screening operation	
7	G	(2) ribbon blenders	
8	G	burning operation	
9	43618	Ball Mill #7 with 2 micro pulsaire Bi Hi's	JUN 11 1981
10	39311	Ball Mill Area	
11	39312	Ball Mill Area	
12	39313	Ball Mill Area	
13	39314	Ball Mill Area	
14	39315	Ball Mill Area	
15	39316	Ball Mill Area	
16	43619	Ball Mill #3 with 2 micro pulsaire BiHi's	

APEDS USE ONLY NJ 9 prev CT # 37406
NJ 10 " CT # 38110

V 1

United States Bronze Powders, Inc.

Rt. 202, R

APC STACK LOG

PLANT I.D. 80030

EMERGENCIES AND SPECIAL PROJECTS
SECTION BUREAU OF AIR POLLUTION CONTROL

STACK NO.	CERTIFICATE NO.	DESCRIPTION OF EQUIPMENT	DATE LOGGED
17		~~#17~~ Abn. 9/13/85 c.H.	
18	42964	Large Gemco Boiler	
19	"	Ball Mill	
20	"	Ball Mill	
21	"	Ball Mill	
22	"	Ball Mill	
23	"	Ball Mill	
24	"	Ball Mill	
25	"	Ball Mill	
26	"	Ball Mill	
27	"	Ball Mill	
28	"	Ball Mill	
29	"	Ball Mill	
30	"	Ball Mill	
31	G	MAGNUS WASHER TANKS	
32	"	Ball Mill	

APEDS USE ONLY

V2

APC STACK LOG

PLANT I.D. 80030

~~EMERGENCIES~~ AND SPECIAL PROJECTS
SECTION BUREAU OF AIR POLLUTION CONTROL

STACK NO.	CERTIFICATE NO.	DESCRIPTION OF EQUIPMENT	DATE LOGGED
33	~~76256~~ ~~00644~~	Tote bin unloader & packer line	MAR 3 1982
34	60793	Atomizing Collection Bin Stack	
35	61441	Plant Vacuum, Screening & loading system	JUL 15 1982
36	72366	#~~36~~ STACK # 36 DELETED 6/15/87 (AS PER UPDATE SHEET DATED 7/6/85)	9/13/85 CAL
37	72[illegible]	#37	1 "
38	1-86-2479 75931	Air Classifier #38	12/30/86 mc 12/2/86 mc

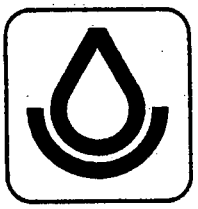
APEDS USE ONLY

V3

ATTACHMENT W

SOIL SURVEY

Hunterdon County New Jersey



UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
NEW JERSEY AGRICULTURAL EXPERIMENT STATION
Issued November 1974

W'

SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter, A, B, C, D, E, or F, shows the dominant slope. Most symbols without a slope letter are those of nearly level soils, but some are for land types that have a considerable range of slope. A final number, 2, in a symbol shows that the soil is eroded.

SYMBOL	NAME
AbA	Abbottstown silt loam, 0 to 2 percent slopes
AbB	Abbottstown silt loam, 2 to 6 percent slopes
Ac	Alluvial land, loamy
Ae	Alluvial land, loamy, wet
AnB	Annandale gravelly loam, 3 to 8 percent slopes
AnC2	Annandale gravelly loam, 8 to 15 percent slopes, eroded
ApB	Annandale and Edneyville gravelly loams, 3 to 8 percent slopes
ApC	Annandale and Edneyville gravelly loams, 8 to 15 percent slopes
AtB	Athol gravelly loam, 2 to 6 percent slopes
AtC2	Athol gravelly loam, 6 to 12 percent slopes, eroded
AtD2	Athol gravelly loam, 12 to 18 percent slopes, eroded
BaB	Bedington shaly silt loam, 2 to 6 percent slopes
BaC2	Bedington shaly silt loam, 6 to 12 percent slopes, eroded
BbB	Berks shaly loam, 2 to 6 percent slopes
BbC2	Berks shaly loam, 6 to 12 percent slopes, eroded
BbD2	Berks shaly loam, 12 to 18 percent slopes, eroded
BdA	Birdsboro silt loam, 0 to 2 percent slopes
BdB	Birdsboro silt loam, 2 to 6 percent slopes
BdC2	Birdsboro silt loam, 6 to 12 percent slopes, eroded
Bt	Bowmansville silt loam
BuB	Bucks silt loam, 2 to 6 percent slopes
BuC2	Bucks silt loam, 6 to 12 percent slopes, eroded
CaA	Califon loam, 0 to 3 percent slopes
CaB	Califon loam, 3 to 8 percent slopes
CbB	Califon very stony loam, 0 to 8 percent slopes
CdA	Chalfont silt loam, 0 to 2 percent slopes
CdB	Chalfont silt loam, 2 to 6 percent slopes
CdC2	Chalfont silt loam, 6 to 12 percent slopes, eroded
CeB	Chalfont very stony silt loam, 2 to 12 percent slopes
CfC	Chalfont-Lehigh very stony silt loams, 2 to 12 percent slopes
CgB	Chalfont-Quakertown silt loams, 0 to 6 percent slopes
Co	Cokesbury loam
Cp	Cokesbury very stony loam
CrA	Croton silt loam, 0 to 2 percent slopes
CrB	Croton silt loam, 2 to 6 percent slopes
CsB	Croton very stony silt loam, 0 to 6 percent slopes
DuB	Duffield silt loam, 2 to 6 percent slopes
DuC2	Duffield silt loam, 6 to 12 percent slopes, eroded
DvC2	Duffield rocky silt loam, 6 to 12 percent slopes, eroded
DwD2	Duffield very rocky silt loam, 12 to 18 percent slopes, eroded
EdB	Edneyville gravelly loam, 3 to 8 percent slopes
EdC2	Edneyville gravelly loam, 8 to 15 percent slopes, eroded
EdD	Edneyville gravelly loam, 15 to 25 percent slopes
EeC	Edneyville and Parker extremely stony loams, 3 to 15 percent slopes
HaB	Hazleton channery loam, 2 to 6 percent slopes
HaC2	Hazleton channery loam, 6 to 12 percent slopes, eroded
HaD	Hazleton channery loam, 12 to 18 percent slopes
HcC	Hazleton very stony loam, 6 to 18 percent slopes
HcE	Hazleton very stony loam, 18 to 40 percent slopes
KlC	Klinesville shaly loam, 4 to 12 percent slopes
KlD	Klinesville shaly loam, 12 to 18 percent slopes
LaB	Lansdale loam, 0 to 6 percent slopes
LaC2	Lansdale loam, 6 to 12 percent slopes, eroded
LaD	Lansdale loam, 12 to 18 percent slopes
LbB	Lansdowne silt loam, 0 to 6 percent slopes
LeB	Lawrenceville silt loam, 2 to 6 percent slopes
LeC2	Lawrenceville silt loam, 6 to 12 percent slopes, eroded
LgB	Legore gravelly loam, 2 to 6 percent slopes
LgC	Legore gravelly loam, 6 to 12 percent slopes
LgD	Legore gravelly loam, 12 to 18 percent slopes
LhB	Lehigh silt loam, 2 to 6 percent slopes
LhC2	Lehigh silt loam, 6 to 12 percent slopes, eroded
LhD2	Lehigh silt loam, 12 to 18 percent slopes, eroded
LkB	Lehigh very stony silt loam, 2 to 6 percent slopes
LkC	Lehigh very stony silt loam, 6 to 18 percent slopes
Ma	Made land
MeB	Meckesville gravelly loam, 2 to 6 percent slopes
MeC2	Meckesville gravelly loam, 6 to 12 percent slopes, eroded
MoB	Mount Lucas silt loam, 0 to 6 percent slopes
MwB	Mount Lucas-Watchung very stony silt loams, 0 to 6 percent slopes
NdB	Neshaminy gravelly loam, 2 to 6 percent slopes
NeB	Neshaminy silt loam, 2 to 6 percent slopes
NeC2	Neshaminy silt loam, 6 to 12 percent slopes, eroded
NhC	Neshaminy very stony silt loam, 2 to 12 percent slopes
NhD	Neshaminy very stony silt loam, 12 to 18 percent slopes
NhE	Neshaminy very stony silt loam, 18 to 40 percent slopes
NkC	Neshaminy-Mount Lucas very stony silt loams, 2 to 12 percent slopes
NoB	Norton loam, 2 to 6 percent slopes
NoC2	Norton loam, 6 to 12 percent slopes, eroded
NoD2	Norton loam, 12 to 18 percent slopes, eroded
PaC	Parker cobbly loam, 3 to 15 percent slopes
PaD	Parker cobbly loam, 15 to 25 percent slopes
PbB	Pattenburg gravelly loam, 2 to 6 percent slopes
PbC2	Pattenburg gravelly loam, 6 to 12 percent slopes, eroded
PbD	Pattenburg gravelly loam, 12 to 18 percent slopes
PbE	Pattenburg gravelly loam, 18 to 40 percent slopes
PcB	Pattenburg gravelly loam, moderately wet, 2 to 6 percent slopes
PeB	Penn shaly silt loam, 2 to 6 percent slopes
PeC2	Penn shaly silt loam, 6 to 12 percent slopes, eroded
PeD	Penn shaly silt loam, 12 to 18 percent slopes
PfB	Penn-Bucks complex, 2 to 6 percent slopes
PfC2	Penn-Bucks complex, 6 to 12 percent slopes, eroded
Pk	Pope fine sandy loam, high bottom
QkA	Quakertown silt loam, 0 to 2 percent slopes
QkB	Quakertown silt loam, 2 to 6 percent slopes
QkC2	Quakertown silt loam, 6 to 12 percent slopes, eroded
QkD2	Quakertown silt loam, 12 to 18 percent slopes, eroded
QlC2	Quakertown-Chalfont silt loams, 6 to 12 percent slopes, eroded
RbA	Raritan silt loam, 0 to 2 percent slopes
RbB	Raritan silt loam, 2 to 6 percent slopes
RcB	Readington silt loam, 2 to 6 percent slopes
RcC2	Readington silt loam, 6 to 12 percent slopes, eroded
ReA	Reaville silt loam, 0 to 2 percent slopes
ReB	Reaville silt loam, 2 to 6 percent slopes
ReC2	Reaville silt loam, 6 to 12 percent slopes, eroded
RfA	Reaville silt loam, wet variant, 0 to 2 percent slopes
RfB	Reaville silt loam, wet variant, 2 to 6 percent slopes
RgB	Riverhead gravelly sandy loam, 2 to 6 percent slopes
RgC	Riverhead gravelly sandy loam, 6 to 18 percent slopes
Rk	Rock land, Edneyville material
RlF	Rough broken land, shale
Ro	Rowland silt loam
SpF	Steep stony land, Parker material
TuB	Turbotville loam, 2 to 6 percent slopes
WaB	Washington loam, 2 to 6 percent slopes
WaC2	Washington loam, 6 to 12 percent slopes, eroded
Wc	Watchung silt loam

W2

WORKS AN

Highways and roads
- Divided .....
- Good motor .....
- Poor motor .....
- Trail .....

Highway markers
- National Interstate ...
- U. S. .....
- State and county .....

Railroads
- Single track .....
- Multiple track .....
- Abandoned .....

Bridges and crossings
- Road .....
- Trail .....
- Railroad .....
- Ferry .....
- Ford .....
- Grade .....
- R. R. over .....
- R. R. under .....

Buildings .....
- School .....
- Church .....

Mine and quarry .....
- Gravel pit .....
- Power line .....
- Pipeline .....
- Cemetery .....
- Dams .....
- Levee .....
- Tanks .....
- Well, oil or gas .....
- Forest fire or lookout sta
- Windmill .....
- Located object .....

Included with this soil in mapping are a few small areas of steeper and less sloping soils, a few areas where soils are shallower over bedrock, some areas of severely eroded areas, and small areas of Penn soils that grade toward this soil. Also included are a few small areas where the surface layer and the heavier subsoil have both been removed, and the very gravelly and sandy substratum is exposed.

Moderately steep slopes, rapid runoff, severe erodibility, and the gravel content of the soil limit use. It is better suited to pasture and hay or to trees and wildlife habitat than to other uses. Capability unit IVe–58; woodland group 2o1.

Pattenburg gravelly loam, 18 to 40 percent slopes (PcD).—This soil has a profile similar to the one described as representative for the series, except that the surface layer and subsoil are thinner, the contrast in texture between horizons is less pronounced, and the texture of the surface layer and subsoil is a little coarser. A few rocks crop out of this soil. A few small areas of less sloping soils are included in mapping.

Steep slopes, rapid runoff, severe erodibility, and the gravel content of this soil make it better suited to pasture, hay, trees, or wildlife habitat than to most other uses. Capability unit VIIe–60; woodland group 2r1.

Pattenburg gravelly loam, moderately wet, 2 to 6 percent slopes (PcB).—The profile of this soil is similar to the one described as representatives for the series, except that mottles are in the lower part of the subsoil. Also, this soil becomes saturated late in winter and early in spring, and it dries slowly in spring. Included in mapping are many small areas of soils where gray mottles occur in the upper 20 inches and a very few areas where mottles are dominantly gray throughout. Also included are small areas of nearly level soils and small areas where slopes are more than 6 percent. These steeper soils have some shallow gullies.

If the soil is properly drained, such crops as corn, small grains, soybeans, and mixed grasses for hay and pasture are suitable. Runoff is medium, and the erosion hazard is moderate. Graded stripcropping supplemented with diversion terraces and grassed waterways are used to dispose of excess surface water and to control erosion. Capability unit IIe–71; woodland group 2w1.

Penn Series

The Penn series consists of moderately deep, gently sloping to moderately steep, well-drained, loamy soil that formed over red shale or siltstone on uplands.

In a representative profile the plow layer is reddish-brown shaly silt loam about 9 inches thick. Beneath this is friable, reddish-brown, shaly silt loam subsoil 13 inches thick. It becomes more shaly as depth increases. The substratum is very shaly loam about 8 inches thick. Bedrock is at a depth of about 30 inches.

Permeability is moderate to moderately rapid in the surface layer and subsoil. Available water capacity is moderate to high depending on the depth to bedrock and the content of shale. Natural fertility is moderate. Natural reaction is strongly acid, but fields that have been limed for a long period are not so acid.

Most areas of these Penn soils have been cleared for farming. Many areas of the more sloping soils are wooded. Cleared areas require erosion control. In places, late in winter and early in spring, the lowest part of the subsoil is saturated, and water flows laterally over the surface of the bedrock. Water seeps into cellars during these periods.

Representative profile of Penn shaly silt loam, 2 to 6 percent slopes, on Wertsville Road, 1.5 miles east of Ringoes and 150 feet south of the road:

Ap—0 to 9 inches, reddish-brown (5YR 4/3) shaly silt loam; moderate, fine, subangular blocky structure; friable; many fine and medium roots; 20 percent angular shale fragments; medium acid; clear, smooth boundary.

Bt—9 to 22 inches, reddish-brown (2.5YR 4/4) slightly clayey shaly silt loam; weak, medium, subangular blocky structure; friable; few medium roots; few thin clay films on faces of peds; 20 percent angular shale fragments; medium acid; clear, smooth boundary.

C—22 to 30 inches, reddish-brown (2YR 5/4) very shaly loam; massive; friable; more than 50 percent shale fragments; medium acid; abrupt, smooth boundary.

R—30 inches, shattered shale bedrock.

The solum ranges in thickness from 20 to 36 inches but generally is less than 24 inches. Depth to bedrock ranges from 20 to 40 inches but generally is less than 30 inches. Content of coarse fragments averages 15 to 30 percent in the A horizon, 20 to 50 percent in the B horizon, and 50 percent or more in the C horizon. The Ap horizon has a hue of 5YR and a value and chroma of 2 to 4. In the Bt horizon the hue is 2.5YR or 5YR, and the value and chroma are 3 or 4. The texture in this horizon ranges from shaly heavy silt loam to shaly heavy loam. Reaction ranges from strongly acid to slightly acid in the C horizon. In the southern part of the county, this soil has a somewhat thinner solum and is shallower to rock than that described in the representative profile for the series.

Penn soils adjoin Bucks, Reaville, and Readington soils and grade toward them. They lack the mottling characteristic of Reaville and Readington soils and are not so deep as Bucks soils.

Penn shaly silt loam, 2 to 6 percent slopes (PeB).—This soil has the profile described as representative for the series. Included in mapping are small areas of nearly level soils that have material eroded from adjoining slopes deposited on their surface. Here the surface layer is unusually thick, and the depth to bedrock exceeds that of the representative profile. Areas of soil that is less than 15 percent shale fragments in the surface layer are included. Also included are small areas of Bucks and Klinesville soils where shallow gullies are common, small areas where the soil is only 16 to 20 inches deep over bedrock, and small areas of moderately well drained, mottled Readington soils. In the northern part of the county, areas are included where the soil has a surface layer of loam that generally has quartzite pebbles in addition to the sandy shale fragments.

Corn, small grain, alfalfa, and grasses are the most suitable crops. Capability unit IIe–65; woodland group 3o1.

Penn shaly silt loam, 6 to 12 percent slopes, eroded (PeC2).—This soil is similar to the one described as representative for the series, except that as a result of erosion it is shallower to shale bedrock. Runoff is rapid on the stronger slopes, and shallow gullies are common.

Included with this soil in mapping are a few areas where the surface layer is less than 15 percent shale fragments. Also included are areas where the surface layer is loam that generally has quartzite pebbles in addition to the sandy shale fragments. Such areas are located in the northern part of the county where Pattenburg soils are associated with this soil. In those areas the bedrock is likely to have

W3

strata of free lime closer to the surface than those of the Penn soils in the southern part of the county.

A moderately severe hazard of further erosion, the low content of organic matter, and the moderate depth to bedrock limit the use of this soil. Intensive conservation measures should be used where row crops are grown. Capability unit IIIe–65; woodland group 3o1.

Penn shaly silt loam, 12 to 18 percent slopes (PeD).—This soil is similar to the one described as representative for the series, except that as a result of erosion it is shallower to bedrock, and the content of shale is greater. Included in mapping, in the northern part of the county, are areas where the surface layer is loam that contains quartzite pebbles in addition to the sandy shale fragments. In these areas the bedrock is likely to have strata of free lime closer to the surface than those of the Penn soils in the southern part of the county.

Runoff is rapid, and the erosion hazard is severe because of the moderately steep slopes. Gullies are common. The content of organic matter is extremely low. This soil is not well suited to row crops. It is better suited to drought-resistant grasses and legumes grown for hay and pasture. Capability unit IVe–65; woodland group 3o1.

Penn-Bucks complex, 2 to 6 percent slopes (PfB).—This mapping unit is about 50 percent moderately deep Penn soil and 50 percent deep Bucks soil. Each of these soils is similar to the one described as representative for its series, except that in many areas the Penn soil is less than 15 percent shale in the surface layer. These soils are too intermingled to map separately. They are gently undulating. The Penn soil is on very low knolls, 1 to 2 feet in height, on the broad uplands. Bucks soil is in the shallow troughs between the knolls.

Included with these soils in mapping are small areas of Readington and Reaville soils.

Crops commonly grown on these soils are corn, small grain, hay, and pasture. On long slopes in cultivated fields, stripcropping and diversion terraces can be used to conserve moisture and to protect these soils from erosion. Capability unit IIe–65; woodland group 3o1.

Penn-Bucks complex, 6 to 12 percent slopes, eroded (PfC2).—This mapping unit is about 70 percent moderately deep Penn soil and 30 percent deep Bucks soil. Each of these soils has a profile similar to the one described as representative for its series, except that the Penn soil has so little shale that the surface layer is dominantly silt loam. They occur together in fairly large areas and on long, moderate slopes. Shallow gullies are common.

This complex is characterized by uneven depths to bedrock. The depth to bedrock in Penn soil ranges from 1½ to 3½ feet, but in Bucks soil it ranges from 3½ to 5 feet. Rapid runoff and the moderately severe erosion hazard limit the use of these soils. Farmed areas need intense conservation practices that control erosion, Capability unit IIIe–65; woodland group 3o1.

Pope Series

The Pope series consists of deep, nearly level, well-drained soils that formed in alluvium. They are adjacent to the Delaware River on low terraces that are subject to overflow about once every 5 years.

In a representative profile the plow layer is dark-brown fine sandy loam about 12 inches thick. The subsoil is friable, brown fine sandy loam 18 inches thick. The upper part of the substratum is brown light sandy loam 16 inches thick. This grades to the loose, dark-brown gravelly sandy loam lower part of the substratum, which is 14 inches thick.

Permeability is moderately rapid in the surface layer and subsoil and rapid in the substratum. Available water capacity is moderate. Natural fertility is low. Natural reaction is medium acid or slightly acid, but fields that have been limed over a long period are not so acid.

Most areas of these Pope soils have been cleared for farming. Because of their sandy nature, lime and fertilizers leach easily. The soils can be worked easily and early and are suited to a wide variety of vegetables. Irrigation is beneficial to high-value crops.

Representative profile of Pope fine sandy loam, high bottom, along the north side of State Highway 29 (River Road), 1.5 miles northwest of Stockton:

Ap—0 to 12 inches, dark-brown (10YR 4/3) fine sandy loam; very weak, fine, granular structure parting easily to single grain; very friable; many fine roots; medium acid; abrupt, smooth boundary.

B—12 to 30 inches, brown (7.5YR 4/4) fine sandy loam; weak, fine, granular structure; friable; few medium roots; very weak clay bridging of sand grains; medium acid; diffuse, wavy boundary.

C1—30 to 46 inches, brown (7.5YR 4/4) light sandy loam; massive; very friable; slightly acid; diffuse, wavy boundary.

IIC2—46 to 60 inches, dark-brown (7.5YR 4/4) gravelly sandy loam; massive; loose; 35 percent rounded quartzose gravel; slightly acid.

The solum ranges from 20 to 30 inches in thickness. Depth to the IIC horizon is more than 40 inches. Depth to bedrock exceeds 6 feet. A few rounded coarse fragments are in the soil to a depth of 40 inches. The gravel is mostly hard quartzose; but in places coarse fragments of red shale, red sandstone, gneiss, diabase, argillite, and limestone are present. Coarse fragments in the IIC horizon range from 20 to 80 percent.

The Ap horizon has a hue of 10YR, a value of 4 or 5, and a chroma of 3 or 4. In the B horizon the hue is commonly 7.5YR but ranges to 5Y, value is 4 or 5, and chroma is 2 to 4. No mottling is present to a depth of 24 inches, but in places color banding or weak variegations are below that depth. Texture of the B horizon generally is fine sandy loam but ranges to loam. The C horizon generally has a hue of 7.5YR, but it ranges to 10YR. In some profiles, variegated colors occur in this horizon. The texture ranges from gravelly sandy loam to gravelly loamy sand. Thin, finer textured bands or lenses are common in the profile; but the sum of their thicknesses, to a depth of 72 inches, does not exceed 6 inches.

Pope soils occur as a narrow band along the Delaware River, from Warren County to Mercer County. They adjoin Riverhead soils but are in a lower position. They are less gravelly than Riverhead soils.

Pope soils in this county have a higher reaction in the lower part than is normal for the series. This, however, does not alter their usefulness or behavior.

Pope fine sandy loam, high bottom (Pk).—This is the only Pope soil mapped in the county. Slopes are mostly 0 to 2 percent, but in places they are as much as 6 percent.

Included in mapping are soils that have a redder subsoil than that of this soil and a few areas of soils that have a gravelly sandy loam surface layer. Also included, in places, are soils that are shallower than 40 inches over the very gravelly substratum and a few low areas immediately adjacent to the river or on islands within the river. The latter areas are flooded annually.

Runoff is slow and erosion is slight. This soil is suited to a wide variety of vegetables. Irrigation is beneficial to

W4


(Joins sheet 36)
N
FLEMINGTON
(county seat)
(Joins sheet 42)
(Joins sheet 45)
1 950 000 FEET
605 000 FEET
1 Mile
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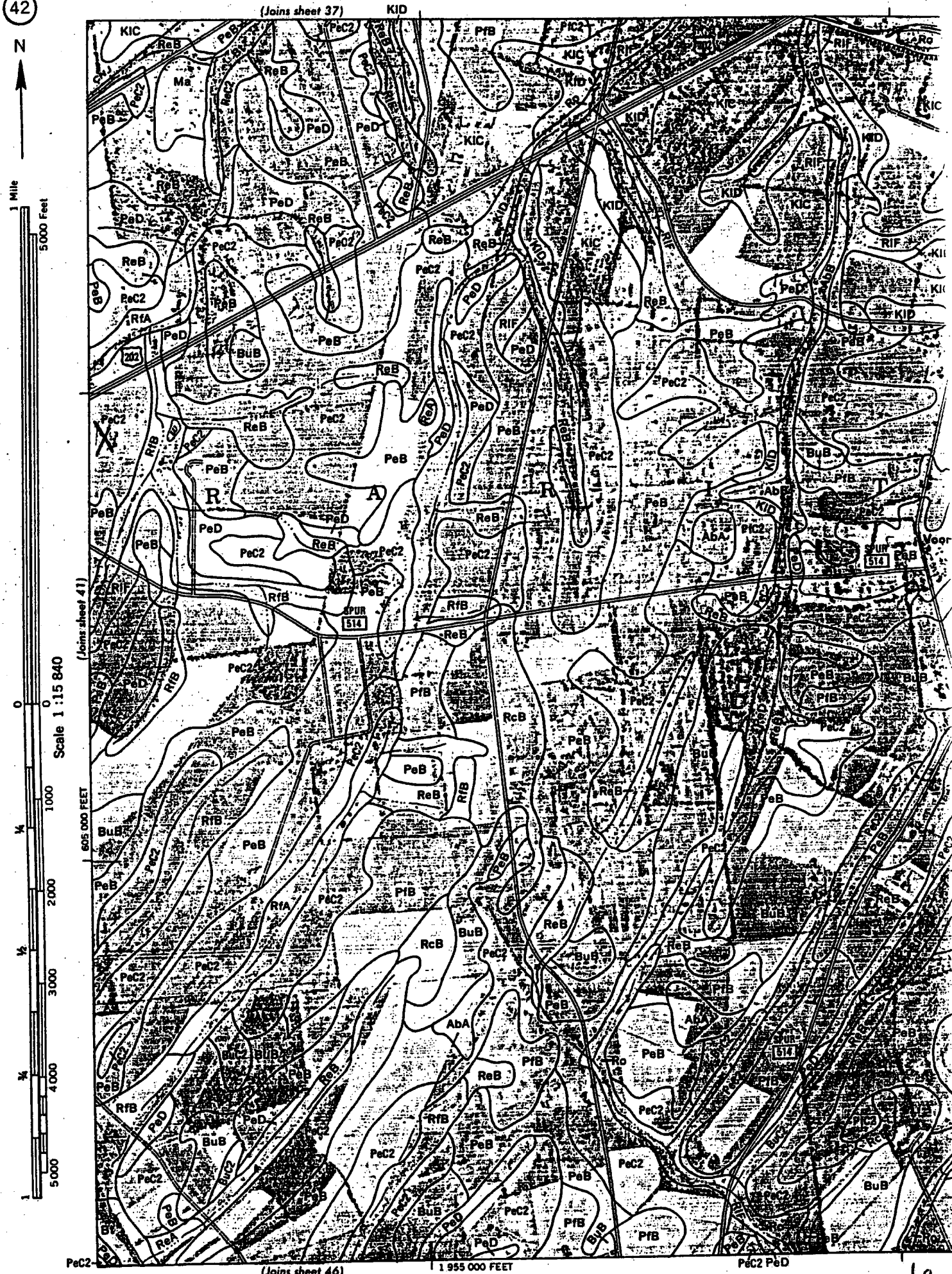
Scale 1 :15 840
Bushkill
Walnut
Neshanic
River
CENTRAL OF NEW JERSEY
SPUR
PENN
Brook

W5


(Joins sheet 37)
KID
KIC
ReB
PeB
PeC2
PeD
PfB
PfC2
RIF
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Ma
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RfA
BuB
RcB
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SPUR 514
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(Joins sheet 46)
605 000 FEET
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1 Mile
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2000
3000
4000
5000

ATTACHMENT X

RECON SYSTEMS, INC.

Route 202 North, P.O. Box 460
Three Bridges, N.J. 08887
201-782-5900

New England 617-752-4217 Pennsylvania 215-433-5511

February 17 1988

Mr. Terry Keth
US Bronze Powder
P.O. Box 31
Flemington, NJ 08822

RE: RECON Project No. 1331

Dear Mr. Keth:

Enclosed are the results of the laboratory analyses run on samples taken at your Flemington, New Jersey facility. The values reported for copper can be compared to those values used as cleanup guidelines by New Jersey Department of Environmental Protection in the administration of the Environmental Cleanup and Responsibility Act (ECRA). The guideline for copper in soil is presently reported to be 170 mg/kg (parts per million, ppm).

Additionally soil values for sulfates and pH are mapped. To date there is no known cleanup guideline for sulfates. The results do indicate that elevated levels of sulfates are present.

Areas showing pH of less than 5 pH units have been highlighted. Background soil pH appears to be in the range of 6-7 pH units. The results have been displayed on a series of maps 1331-100-B through 1331-160-B. Also enclosed are boring logs of sampling locations. A summary table is also included.

Results for copper show the area below the concrete floor near the sump to be contaminated, as is the area outside the building and running east northeast along the fence. The area inside the 170 ppm contour line (see maps 1331-110-B and 1331-120-B) is above ECRA guidelines. The presence of low pH and high sulfates corresponds with high copper concentrations.

There is copper associated with the Brunswick shale. However, samples such as B-3 with levels of copper in the range of 20-30 ppm suggest that this is a reasonable background level for your site. The results of BG-1 are expected to confirm these levels.

It appears that there are two separate processes which have contributed to the situation as defined (see map 1331-120-B). One is associated with deterioration of the concrete floor due to long term exposure to acids. This has resulted in the high

1331-120-B

levels of copper found at 6-12" and 12-18" at I-1 and high levels of copper found at 40-48" at B-1. The normal pH and low levels of copper and sulfates in 6-12" at B-1 indicate that the source of the deep contamination was probably from another location (ie. I-1) not infiltration from the surface.

The second event is indicated by the lack of vegetation along the fence on the southern border of the property. Blue green staining and extremely high copper levels near the surface at B-2, B-4, B-5, and B-6 infer the occurance of a discharge or fugitive emissions. Copper levels are high even at depths of three feet in B-4 and B-5. The door leading from the electrolysis room to the area in question is a likely avenue for the introduction of materials.

Boring B-3 is located near a hole in the east wall of the electrolysis room but shows no evidence of contamination. The plumes outlined in the drawings appear to be limited latterly north and south. However, the surface contamination may extended to the creek east of US Bronze as evidenced by the lack of vegetation along suspected flow paths.

TABLE 1. Summary of Sampling Data

Sample No.	Boring No.	Depth	pH	Copper mg/kg (dry/wt)	Sulfate mg/kg (wet/wt)
9393	I-2	6-12"	7.41	148	66
9395	I-1	6-12"	2.99	?,070	9,460
9394	I-1	12-18"	2.38	2,200	11,780
9612	B-1A	6-12"	7.09	97.1	81.1
9613	B-1B	40-48"	4.84	644	72.6
9614	B-2A	6-12"	4.98	3,010	834
9615	B-2B	40-48"	6.24	129	143
9616	B-3A	6-12"	6.70	28.8	9.5
9617	B-3B	36-42"	7.23	18.0	13.1
9618	B-4A	6-12"	4.26	1,240	197
9619	B-4B	36-42"	6.17	973	273
9620	B-5A	6-12"	4.42	1,590	87.3
9621	B-5B	24-30"	4.29	1,450	ND <11.2
9622	B-6A	6-12"	5.63	493	46.2
	Water mg/l				
9623	Field Blank		6.90	0.04	<0.42

Sample S-1 taken on February 2, 1988 will add information.

X2

Samples S-2 and S-3 were collected on February 11, 1988. These samples were taken in the areas of suspected contamination. The results will be sent to you as soon as I have received them.

Very truly yours,

J.Douglas Reid-Green
Project Geologist
Doug Reid Green/SEF
Robert M Wolfertz (WRM)
Robert M. Wolfertz
Vice President

JDRG/ak

V3

ATTACHMENT Y

RECON SYSTEMS, INC.

Route 202 North, P.O. Box 460
Three Bridges, N.J. 08887
201-782-5900

New England 617-752-4217 Pennsylvania 215-433-5511

February 24, 2988

Mr. Terry Keth
US Bronze Powder
P.O. Box 31
Flemington, NJ 08822

RECON Project No. 1331

Dear Mr. Keth:

Enclosed are the results of the analyses run on the most recent round of sampling conducted at your Flemington, New Jersey facility. Once again the values for copper can be compared to the values used as cleanup guidelines by New Jersey Department of Environmental Protection (NJDEP) under the Environmental Cleanup and Responsibility Act (ECRA). The guidelines for copper in soil are presently reported to be 170 mg/kg (parts per million).

Analysis was also run for sulfates and pH. Although there is no action level suggested for sulfates, soil having a pH of less than 2 pH units has been considered hazardous by the NJDEP.

Samples S-1, S-2 and S-3 were collected from 0-6", while the background sample (BG-1) was taken at 6-12" below grade. Weathered shale was encountered at a depth of 6" in S-1.

Copper results indicated a wide range of concentrations. As expected the background sample was 28.5 ppm (see letter of February 17, 1988). The results for S-1, S-2 and S-3 show elevated levels of copper.

S-1 was taken along the same trend as B-2, B-4, B-5 and B-6. It had levels of sulfate above background (ND) and anomalous pH for the site. This phenomena was also noted in B-2, B-4, B-5 and B-6. This suggests a common origin for these results.

Samples S-2 and S-3 have no detectable levels of sulfates and pH levels within the range of the background sample. This suggests a separate source for this copper as compared with the copper found in B-2, B-4, B-5, B-6 and S-1. The proximity of S-2 and S-3 to the large dust collectors suggests the collectors are a possible source for the copper.

The high levels of copper in S-2 and S-3 indicates a need for further delineation sampling in this area. The results of this delineation can be used to determine the amount of remediation necessary.

Yours very truly,

J. Douglas Reid-Green
Project Geologist

Stephen E. Laney
Senior Geologist

JDRG/ak

RECON SYSTEMS INC.

ROUTE 202N, P.O. BOX 460, THREE BRIDGES, N.J. 08887
201-782-5900
NEW ENGLAND 617-752-4217 PENNSYLVANIA 215-433-5511

ANALYSIS REPORT

February 18, 1988

TO: U. S. BRONZE PROJECT **Attn: Douglas Reid-Green**
RECON Project No. 1331

SAMPLE: Soil, sampled 2/11/88, depth 0-6"

RECON ID	Field Blank 10000	Minimum Detection Limit
pH	6.30	
	mg/l	
Copper	ND	0.02
Sulfate	ND	0.41

RECON ID	Background 10001	S-1 10002	S-2 10003	S-3 10004	Minimum Detection Limit
pH	6.92	5.14	6.48	6.86	--
	mg/kg				
Copper	28.5	1,180	75,900	18,800	0.3
Sulfate	ND	10	ND	ND	5

Samples from this project will be retained for sixty (60) days from the date of this report unless otherwise directed.

Submitted by,

G. Stephen Hornberger, B.S.
Manager, Chemical Lab

Per Wayne K. Halozan, B.A.
Chemist

WKH/chp
AR5

New Jersey State Certified Water Laboratory
Certification No. 10196

ATTACHMENT Z

Dan Raviv Associates, Inc.
Consultants in hydrogeology, water quality, landfill hydrology and ECRA/NJPDES compliance

Dan D. Raviv
Roberta N. Hoy

William F. Althoff
David J. Morrow
Kenneth B. Siet
Raymond E. Simonds
Edwin D. Tichenor

January 8, 1991

JAN 15 RECD

United States Bronze Powders, Inc.
P.O. Box 31, Route 202
Flemington, New Jersey 08822-0031

Attention: Mr. Niels L. Nielson, P.E.
Vice President, Operations

Re: Results of Phase II
Soil Sampling (November 13 and 19, 1990)
United States Bronze Powders, Inc.
Flemington, New Jersey
DRAI Job No. 90C773

Dear Mr. Nielson:

Dan Raviv Associates, Inc. (DRAI) has prepared this report detailing the results of the Phase II Soil Sampling conducted at the United States Bronze Powders, Inc. (USBPI) site in Flemington, New Jersey (Figure 1). Based upon these results additional soil locations will be proposed by DRAI in order to determine the horizontal extent of copper present in the soil at the site. In addition, DRAI will present remediation alternatives.

Sampling Methodology

Field work at the site was conducted on November 13 and 19, 1990 and consisted of collecting 30 soil samples and three sediment samples at predetermined locations designated by a coordinate system that divides the site into 50-foot squares. All locations had at least one sample taken at a depth of 0-0.5'. Five locations had an additional sample taken at a depth of 1.5-2.0'. The soil sample locations were chosen by expanding the original coordinate system to the north, south and east of the area previously sampled on September 5, 1990.

The soil samples were collected using a hand auger device and dedicated, laboratory-cleaned split spoons. The sampling and equipment decontamination procedures followed DRAI's New Jersey Department of Environmental Protection (NJDEP)-approved protocols and were also approved by Insurance Restoration Specialists (IRS), consultants for the adjacent property owners. All collected soil samples were submitted to Accutest Laboratories, Dayton, New Jersey and analyzed for Copper (Cu). In addition, the pH was measured.

Analytical Results

Soil sample analytical results are presented in Table I and on Figure 2. The background sample result (sampled on September 5, 1990) was 83 parts

2

per million (ppm) of Cu, and had a pH of 6.1. This data, as well as the NJDEP soil action level guideline of 170 ppm for Cu, was used as a basis in determining the extent of the copper-impacted soil at the site.

Analytical results of soil samples indicated that concentrations of Cu ranged from 12 ppm to 14,000 ppm (Table I). A total of six shallow samples (0-0.5' depth) had concentrations of Cu less than the NJDEP soil action level. Ninteen samples from 0-0.5' depth were found to have concentrations of Cu exceeding the NJDEP soil from action level. However, only one sample obtained from a depth greater than 0.5' (sample B7) had a concentration (210 ppm) above the soil action level. The highest concentrations of Cu in soil samples were found at a depth not exceeding 0.5' and are generally near the injection and collection trenches and the manufacturing building. Some rather high concentrations are located near the adjacent farm house (as far as 450' northeast of the collection and injection trenches). The concentrations at this particular location may be explained by the prevailing wind at the site.

Three composite soil samples were formed by compositing soil samples E2, E1 and B3; soil samples H3, D2 and B1; and, soil samples G4, F4, A2 and B2. Two leachability tests were performed on the three composite soil samples. The first test was a normal leachability test and the second test was a one to one (wt/vol) neutral attraction performed for 12 hours using a 0.005 M CaCl leachate solution. No test on any sample leached more then 1.6 ppm of Cu. These results suggest that the amount of Cu leached at the site is probably negligible.

Following receipt of the soil sample analytical results, USBPI requested that DRAI, as per the requirements of the Spill Act, report the results of the Phase II investigation to Mr. Gary Pearson of the NJDEP on December 21, 1990.

If you have any questions or need additional information, please call.

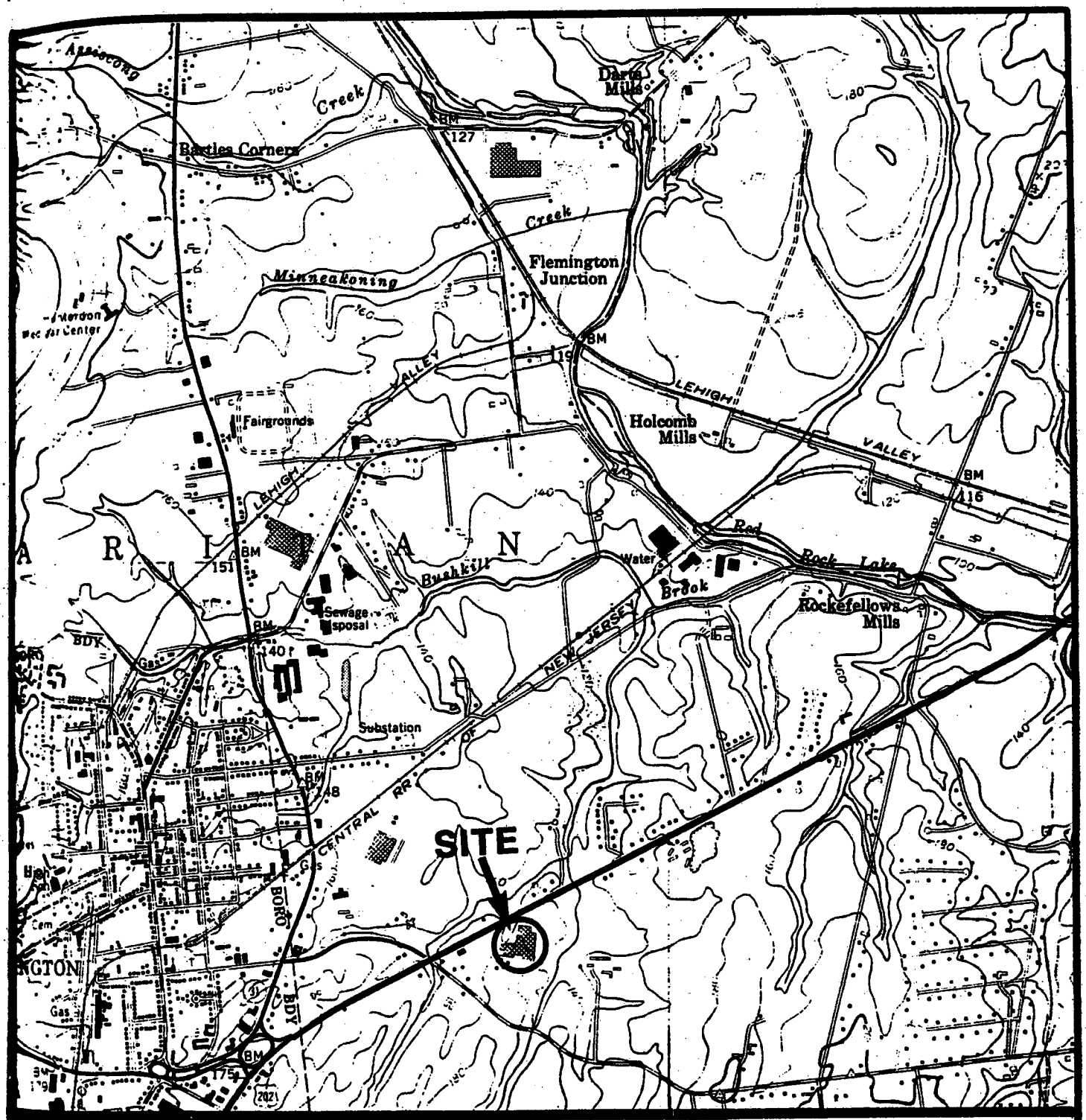
Very truly yours,

DAN RAVIV ASSOCIATES, INC.

James M. Kenny
Geologist

Reviewed by:
Raymond E. Simonds
Project Mgr/Hydrogeologist

JMK/RES/mr
Enc.
cc: Mr. Bruce Klotz
Mr. Robert Coursen, Jr., (IRS)
Mr. Richard Schachter Esq.
Mr. Gary Pearson (NJDEP)



FLEMINGTON QUADRANGLE
7.5 MINUTE SERIES

0 2,000 FT

APPROXIMATE SCALE

N

Dan Raviv Associates, Inc.
57 E. Willow Street Millburn, NJ 07041

SITE LOCATION MAP

U.S. BRONZE CORPORATION - FLEMINGTON, NJ

PREPARED BY: RES/MV	DATE: JUNE 1990
JOB NO.: 90C773	FIGURE: 1

Z3

Table I
Summary of Copper Concentrations In Soil and
Sediment Sampled September 5 and November 13, 1990
U.S. Bronze
Flemington, New Jersey

DRAI Sample No.	Sample Depths	Copper Concentrations
AA13	0-0.5	590
A2	0-0.5	1400
A5	0-0.5	3800
A6	0-0.5	14000
A14	0-0.5	260
	1.5-2.0	23
B1	0-0.5	550
	0.5-1.0	520
B2	0-0.5	2200
B4(A)	0-0.5	780
	0.5-1.0	1200
B4(B)	0-0.5	800
	0.5-1.0	750
B7	0-0.5	470
	1.5-2.0	210
B8	0-0.5	450
B13	0-0.5	390
B15	0-0.5	230
B16	0-0.5	210
C3	0-0.5	780
C5	0-0.5	410
C14	0-0.5	130
D2(A)	0-0.5	370
	1.5-2.0	20

Notes: (1) Sample depths represent feet below grade.
(2) Copper concentrations are in parts per million.

Dan Raviv Associates, Inc.
DRAI Job No. 90C773

Z4

Table I (cont'd)
Summary of Copper Concentrations In Soil and
Sediment Sampled September 5 and November 13, 1990
U.S. Bronze
Flemington, New Jersey

DRAI Sample No.	Sample Depths	Copper Concentrations
D2(B)	0-0.5	450
	1.5-2.0	29
D3	0-0.5	300
D4	0-0.5	62
D7	0-0.5	100
D13	0-0.5	270
D15	0-0.5	17
E1	0-0.5	220
E2	0-0.5	340
E5	0-0.5	690
	0.5-1.0	34
E14(A)	0-0.5	360
E14(B)	0-0.5	170
F2	0-0.5	790
F3	0-0.5	700
	1.5-2.0	25
F4	0-0.5	1400
F6	0-0.5	350
F7(A)	0-0.5	250
F7(B)	0-0.5	38
F13	0-0.5	250
	1.5-2.0	12
G1	0-0.5	420

Notes: (1) Sample depths represent feet below grade.
(2) Copper concentrations are in parts per million.

Dan Raviv Associates, Inc.
DRAI Job No. 90C773

Table I (cont'd)
Summary of Copper Concentrations In Soil and
Sediment Sampled September 5 and November 13, 1990
U.S. Bronze
Flemington, New Jersey

DRAI Sample No.	Sample Depths	Copper Concentrations
G4	0-0.5	2000
G13	0-0.5	34
H1	0-0.5	470
H3	0-0.5	470
H4(A)	0-0.5	810
H4(B)	0-0.5	700
H7	0-0.5	360
I2	0-0.5	820
	1.5-2.0	21
I5	0-0.5	270
I6	0-0.5	270
I7	0-0.5	360
	1.5-2.0	15
I13	0-0.5	42
I15	0-0.5	27
J4(A)	0-0.5	180
J4(B)	0-0.5	310
K2	0-0.5	720
S1	0-0.5	21
S2	0-0.5	21
S3	0-0.5	43

Notes: (1) Sample depths represent feet below grade.
(2)Copper concentrations are in parts per million.

Dan Raviv Associates, Inc.
DRAI Job No. 90C773

ATTACHMENT AA

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

NOTICE OF VIOLATION

DATE March 31, 1987

Northern
ENFORCEMENT ELEMENT
BUREAU OF REGIONAL ENFORCEMENT
TELEPHONE NO. (201) 299-7592

PCWS # _____ TYPE SUPPLY _____ NJPDES # NJ0003336 TYPE DISCH Non contact cooling and STORM WATER RUNOFF RCRA # _____
NAME OF FACILITY U.S Bronze Powders, Inc.
LOCATION OF FACILITY Rt 202 North MUN. Raritan Twp COUNTY Hunterdon
FACILITY REPRESENTATIVE AND TITLE Terry J. Keth, Plant Engineer

You are hereby NOTIFIED that during an inspection of your facility on the above date, the following violations were noted and remedial actions are required:

DESCRIPTION OF VIOLATION/REMEDIAL ACTION: ① Unpermitted discharge to ground water From drainage system in electrolyte process area (Ferrulink). ② Metal Flake being discharged From Floor drains in ball mill area to Discharge 001 ③ Improper DMR Reporting — No Londings Reported, # of exemptions not reported, Frequency of analysis not reported sample type not reported, Flows not reported ④ Flow From 001 is not monitored ⑤ Total Suspended solids not monitored ⑥ No Licensed operator For oil/water separator

The above noted violations are in violation of the following N.J. Statutes/Regulation, and will be recorded as part of the permanent enforcement history of your facility:

- ☑ New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Water Supply Management Act (N.J.S.A. 58:1A-1 et seq.) and appropriate Regulations.
- ☐ New Jersey Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.) and appropriate Regulations.

Remedial action to correct the violations must be initiated immediately. Within five (5) calendar days of receipt of this Notice of Violation, you shall telephone the investigator issuing this notice at the above number with the corrective measures you have initiated to attain compliance. The issuance of this document serves as notice to you that the Department has determined that a violation has occurred and does not preclude the State of New Jersey or any of its agencies, from initiation of further administrative or judicial enforcement action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are subject to penalties of up to $25,000 per day.

Further enforcement action, which will require a written response, may be issued on these violation(s) and any additional violations found during the inspection.

Joan F. Rogauskas
Investigator, Division of Water Resources, DEP
JOAN F. ROGAUSKAS

Violation received by
Terry J Keth

White - Original *Canary - Bureau File* *Pink - Criminal Justice* *Goldenrod - Central File*

New Jersey Is An Equal Opportunity Employer

AA

ATTACHMENT BB

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Eric J. Evenson
Acting Director

(609) 292-1637
Fax # (609) 984-7938

IN THE MATTER OF	:	ADMINISTRATIVE ORDER AND
UNITED STATES BRONZE	:	NOTICE OF CIVIL ADMINISTRATIVE
POWDERS, INCORPORATED	:	PENALTY ASSESSMENT

This Administrative Order and Notice of Civil Administrative Penalty Assessment is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "NJDEP") by N.J.S.A. 13:1D-1 et seq., and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and duly delegated to the Assistant Director or Bureau Chief of the Division of Water Resources, Enforcement Element pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. United States Bronze Powders, Incorporated (hereinafter "U.S. Bronze") operates a facility located at Block 40, Lot 4, Route 202 North, Flemington, Hunterdon County, New Jersey.

2. On December 20, 1982, the United States Environmental Protection Agency (hereinafter "USEPA") issued National Pollutant Discharge Elimination System (hereinafter "NPDES") permit No. NJ0003336, effective February 1, 1983, to U.S. Bronze authorizing the discharge of pollutants from its treatment plant to surface waters known as the Mill Creek. Subsequently, NJDEP converted the NPDES permit into New Jersey Pollutant Discharge Elimination System (hereinafter "NJPDES") permit No. NJ0003336 pursuant to N.J.A.C. 7:14A-10.2(a) with all terms and conditions of the NPDES permit remaining intact. Although the expiration date of this permit elapsed prior to issuance of a permit renewal, pursuant to the "Administrative Procedure Act," N.J.S.A. 52:114B-11, the conditions of the expired permit continued in force until the effective date of the permit renewal. On September 30, 1988, the Department issued U.S. Bronze a renewal NJPDES permit No. NJ0003336. The permit was effective November 1, 1988 and expires October 31, 1991.

3. Pursuant to NJPDES Permit No. NJ0003336 (hereinafter "the Permit"), U.S. Bronze discharges pollutants, as defined by N.J.A.C. 7:14A-1.9, into waters of the State.

4. No person shall discharge any pollutant except in conformity with a valid NJPDES Permit issued pursuant to the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

5. Part III-B/C of the Permit sets forth specific parameters to be reported on Discharge Monitoring Reports (hereinafter "DMRs") and identifies discharge limitations for each parameter for each permitted outfall.

6. U.S. Bronze has submitted DMRs to NJDEP as required by Part I, Paragraph 11.I of the Permit for the period of August 1987 through April 1989. The DMRs demonstrate that U.S. Bronze has violated the discharge limits of the Permit. Listed below are the dates and parameters which were violated:

Reporting Period	Parameter	Permit Limits	Reported Value
2/89-4/89	Cu	1.0 mg/l	1.6 mg/l
	Zn	1.0 mg/l	2.3 mg/l
11/88-1/89	COD	100 mg/l	130 mg/l
	Cu	1.0 mg/l	4.2 mg/l
	Zn	1.0 mg/l	4.0 mg/l
	TDS	1000 mg/l	1200 mg/l
8/88-10/88	COD	50 mg/l	200 mg/l
	pH	6.0 su (min)	2.07 su
	pH	9.0 su (max)	9.41 su
5/88-7/88	COD	50 mg/l	160 mg/l
	Cu	1.0 mg/l	1.8 mg/l
	Zn	1.0 mg/l	2.9 mg/l
11/87-1/88	Cr	.5 mg/l	.7 mg/l
	Cu	1.0 mg/l	4.7 mg/l
	Zn	1.0 mg/l	2.6 mg/l
8/87-10/87	COD	50 mg/l	160 mg/l
	Petroleum Hydrocarbons	10 mg/l	12.5 mg/l
	Cu	1.0 mg/l	2.0 mg/l
	Zn	1.0 mg/l	1.2 mg/l

The following abbreviations were used in the table above:

Cu - Copper
Zn - Zinc
Cr - Chromium
COD - Chemical Oxygen Demand
TDS - Total Dissolved Solids
mg/l - milligrams per liter
Su - Standard Units

7. Based on the facts set forth in these FINDINGS, the Department has determined that U.S. Bronze has violated the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., specifically N.J.S.A.

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58:10A-6, and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A-1 et seq., specifically N.J.A.C. 7:14A-1.2.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

8. U.S. Bronze shall discharge pollutants only in conformity with NJPDES Permit No. NJ0003336, the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A-1.1 et seq.

NOTICE OF CIVIL ADMINISTRATIVE PENALTY ASSESSMENT

9. Pursuant to N.J.S.A. 58:10A-10d and N.J.A.C. 7:14-8.1 et seq., and based upon the above FINDINGS, NJDEP has determined that a civil administrative penalty should be assessed against U.S. Bronze in the amount of $255,000. NJDEP's rationale for this Civil Administrative Penalty is set forth in Appendix A which is attached hereto and incorporated herein.

10. Payment of the penalty is due when a final Order is issued by the Commissioner subsequent to a hearing, if any, or when this Notice of Civil Administrative Penalty Assessment becomes a final Order (see following paragraph). Payment shall be made by certified or cashier's check payable to "Treasurer, State of New Jersey" and shall be submitted with the white copy of Form DEP - 062A (copy attached) to:

Bureau of Revenue
New Jersey Department of Environmental Protection
CN 402
Trenton, New Jersey 08625-0402

11. If no request for a hearing is received within twenty (20) calendar days after receipt of this Notice of Civil Administrative Penalty Assessment by U.S. Bronze, it shall become a final Order upon the twenty-first (21) calendar day following its receipt by U.S. Bronze, and the penalty shall be due and payable.

NOTICE OF RIGHT TO A HEARING

12. U.S. Bronze is entitled to an administrative hearing. Any hearing request shall be delivered to the address referenced in paragraph 15 below within twenty (20) calendar days from receipt of this Administrative Order and Notice of Civil Administrative Penalty Assessment.

13. U.S. Bronze shall, pursuant to N.J.A.C. 7:14-8.4(a) in its request for a hearing, furnish NJDEP with the following:

    a. the name, address and telephone number of U.S. Bronze and its authorized representative;

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b. U.S. Bronze defenses to each of the findings of fact stated in short and plain terms;

c. an admission or denial of each of the findings of fact. If U.S. Bronze is without knowledge or information sufficient to form a belief as to the truth of a finding, U.S. Bronze shall so state and this shall have the effect of a denial. A denial shall fairly meet the substance of the findings denied. When U.S. Bronze intends in good faith to deny only a part or a qualification of a finding, U.S. Bronze shall specify so much of it as is true and material and deny only the remainder. U.S. Bronze may not generally deny all of the findings but shall make all denials as specific denials of designated findings. For each finding U.S. Bronze denies, U.S. Bronze shall allege the fact or facts as U.S. Bronze believes it or them to be;

d. information supporting the request and specific reference to/or copies of other written documents relied upon to support the request;

e. an estimate of the time required for the hearing (in days and/or hours); and,

f. a request, if necessary, for a barrier-free hearing location for physically disabled persons;

GENERAL PROVISIONS

14. This Administrative Order and Notice of Civil Administrative Penalty Assessment is binding on U.S. Bronze, its principals, directors, officers, agents, successors, assigns, any trustee in bankruptcy or other trustee, and any receiver appointed pursuant to a proceeding in law or equity.

15. U.S. Bronze shall submit all documents required by this Administrative Order and Notice of Civil Administrative Penalty Assessment by certified mail, return receipt requested or by hand delivery to:

Joseph M. Mikulka, Chief
Northern Bureau of Regional Enforcement
Division of Water Resources
1259 Route 46, Building 2
Parsippany, New Jersey 07054

Penalty payments shall be made in the manner indicated in paragraph 10 above.

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16. Notice is given that this Administrative Order and Notice of Civil Administrative Penalty Assessment is issued only for the violations identified in the FINDINGS hereinabove and that violations of any statutes, rules or permits other than those herein cited may be cause for additional enforcement actions, either administrative or judicial, being instituted without further notice. By issuing this Administrative Order and Notice of Civil Administrative Penalty Assessment the Department does not waive its right to initiate additional enforcement actions.

17. Obligations and penalties of this Administrative Order and Notice of Civil Administrative Penalty Assessment are imposed pursuant to the police powers of the State of New Jersey for the enforcement of law and the protection of the public health, safety and welfare and are not intended to constitute debt or debts which may be limited or discharged in a bankruptcy proceeding.

18. Notice is given that pursuant to N.J.S.A. 58:10A-10d, NJDEP is authorized to assess a civil administrative penalty of not more than $50,000 for each violation, and each day during which the violation continues shall constitute an additional, separate and distinct offense.

19. Notice is further given that pursuant to N.J.S.A. 58:10A-10e, any person who violates N.J.S.A. 58:10A-1 et seq., or an Administrative Order issued pursuant to N.J.S.A. 58:10A-10b, or who fails to pay the civil administrative penalty in full after it is due shall be subject to a civil penalty not to exceed $50,000 per day of such violation, and each day's continuance of the violation shall constitute an additional, separate and distinct violation.

20. Notice is further given that pursuant to N.J.S.A. 58:10A-10f, any person who willfully or negligently violates N.J.S.A. 58:10A-1 et seq. shall, upon conviction, be guilty of a crime of the fourth degree and shall be punished by fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than one year or by both. Punishment for a second offense under this subsection shall be a fine of not less than $10,000 nor more than $100,000 per day of violation, or by imprisonment for not more than two years, or both. Any person who knowingly makes a false statement, representation or certification in any application, record or other document filed or required to be maintained under this Act, or falsifies, tampers with or knowingly renders inaccurate, any monitoring device or method required to be maintained pursuant to this N.J.S.A. 58:10A-1 et seq. shall upon conviction, be subject to a fine of not more than $20,000 or by imprisonment for not more than six (6) months, or by both.

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21. This Administrative Order shall be effective upon receipt.

BY THE AUTHORITY OF
ERIC J. EVENSON
ACTING DIRECTOR
DIVISION OF WATER RESOURCES
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

DATE: NOV 03 1989

BY: _____
James K. Hamilton
Assistant Director
Enforcement Element

BB6

SCHACHTER, COHN, TROMBADORE & OFFEN

A PROFESSIONAL CORPORATION

COUNSELLORS AT LAW

RICHARD J. SCHACHTER*
JOHN J. TROMBADORE*†
STEPHEN M. OFFEN*
THOMAS A. PAVICS†
MICHAEL J. STANTON
JOHN F. BRACAGLIA, JR.
ALLEN V. BROWN
WILLIAM D. ALDEN
CARL C. BOSLAND

OF COUNSEL
NED M. COHN

*CERTIFIED CIVIL TRIAL ATTORNEY
†CERTIFIED CRIMINAL TRIAL ATTORNEY

45 EAST HIGH STREET
P. O. BOX 520
SOMERVILLE, N. J. 08876-0520
201-722-5700

TELECOPIER: 201-722-8853

November 17, 1989

State of New Jersey
Department of Environmental Protection
Northern Bureau of Regional Enforcement
Division of Water Resources
Attention: Mr. Joseph M. Mikulka, Chief
1259 Route 46, Building 2
Parsippany, NJ 07054

Re: United States Bronze Powders, Incorporated
Our File No. J503

Dear Mr. Mikulka:

We shall appreciate your accepting this letter as a request for an administrative hearing in accordance with the Administrative Order and Notice of Civil Administrative Penalty Assessment recently served upon United States Bronze Powders, Incorporated ("U.S. Bronze").

In accordance with the terms of the order, please be advised as follows:

a. This office is the authorized representative of U.S. Bronze and our address and telephone number are as set forth above.

b. U.S. Bronze does not deny any of the findings set forth in Paragraphs 1 through 6 except to assert that it has no knowledge as to the accuracy of the test results reported as set forth in Paragraph 6 of the order and that its permit limit for petroleum hydrocarbons was 15 mg/l in 1987.

c. It is the position of U.S. Bronze that the discharge limits imposed upon it are unreasonable, unfair and unrealistic and that that proposed penalty is excessive.

BB7

d. In approximately 1982, U.S. Bronze received its first discharge permit from the Environmental Protection Agency of the United States Government. This was renewed by the D.E.P. in September, 1988. Until the permit was issued, there were no limitations on the discharge of copper or zinc but since the issuance of the first permit, U.S. Bronze has attempted to reduce the discharge of these metals.

In 1988, U.S. Bronze hired Recon Systems to assist it in the reduction of the discharge of these metals. Remedial action, including the following was undertaken:

i. Installation of more efficient filter media to minimize discharges into the air.

ii. Installation of a secondary filter system to prevent leaks into the air. This was installed in August, 1989 in one conveyor as a test. It seems to be successful and, therefore, this will be installed on all conveyors.

iii. Adoption of "best management practice" program involving improved training of personnel, increased surveillance and periodic inspections.

iv. Installation of a central vacuum system in the foundry.

v. Heavier lime spreading on lawn areas in an attempt to offset the results of acid rain.

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As you know, U.S. Bronze uses water in its processing but the water is used only for non-contact cooling. This water, as it leaves the well prior to use, has been analyzed as containing 0.013 ppm of copper. The new permit effective in May, 1990 has been issued limiting discharge of copper to 0.014 ppm and to 0.097 ppm of zinc. Considering that the well water is just 0.001 ppm below the allowable discharge, the limitation pertaining to copper seems unrealistic. Over the thirty years that U.S. Bronze has operated on the site, copper powder has deposited on surfaces where it can be dissolved by acid rain and appear in solution. Considering, however, that for many years there were no requirements and considering the content of copper in the ground water, the alleged violations and the proposed new limits (effective May, 1990) are unrealistic and unfair. Current discharges are probably related primarily to historical deposition of copper and acid rain, neither of which can be currently controlled by U.S. Bronze.

Since February, 1989, analyses of U.S. Bronze discharge to surface water have consistently been within the allowable limits. However, they are still above the limits proposed for May, 1990. The reduction since February, 1989 demonstrates the good faith attempts by U.S. Bronze to control and reduce discharged pollutants. Before February, 1989, copper content was inconsistent but attempts were being made and these bore fruit starting in February, 1989.

It is unfair to impose limits that are unrealistic considering the history of the situation and to assess penalties for previous violations after U.S. Bronze has come into compliance.

It is understood that the samples which were analyzed can no longer be re-tested because they are either unavailable or because any subsequent analysis will be invalid. If this is the case, it is unfair of the D.E.P. to impose penalties in some cases two years after the fact knowing that any subsequent testing will be invalid and knowing of the margin of error in the types of analysis that were done.

It is also the position of U.S. Bronze that the penalty, considering the history and the good faith efforts of U.S. Bronze to correct the situation and to come into compliance, is excessive and draconian.

e. It is impossible at this time to estimate the time required for a formal hearing but we request that a preliminary hearing be held. We estimate that the time for the preliminary hearing would be between thirty and sixty minutes.

Thank you for your consideration of this matter.

Very truly yours,

SCHACHTER, COHN, TROMBADORE & OFFEN
A Professional Corporation

By: _____
Richard J. Schachter

RJS:dmb
Via certified and regular mail
cc: United States Bronze Powders, Incorporated, Attention:
Niels L. Nielson, Vice President/Operations
United States Bronze Powders, Incorporated, Attention:
Mr. Bruce Klotz
Recon Systems, Inc., Attention: Dr. Norman Weinstein

BB10

Let's protect our earth

BF/JR

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 Route 46, Building 2
Parsippany, New Jersey 07054

(201) 299-7592
Fax # (201) 299-7719

JUL 26 1991

MEMO

TO: DAG Ken Elwell, Division of Law

FROM: Chief Joseph M. Mikulka, Northern Bureau of Regional Enforcement

SUBJECT: Hearing Request
United States Bronze Powders, Inc.
NJPDES Permit No.: NJ0003336
Raritan Township, Hunterdon County

Attached please find a DOL referral form and the required copies of an OAL referral package for the referenced facility. Please note that the letter granting the hearing request is missing from the package. The hearing was referred to the Division of Regulatory Affairs on May 23, 1990, but was lost in transit. This package represents a resubmission of that same case.

The Department recommends that this matter be consolidated with OAL Docket Number EWR 03266-91 and referred to Carol Jacobson, who is familiar with the issues and the settlement position of the Department.

The case manager is Sharon Coe, who may be contacted at (201) 299-7592.

J.M.M.

Attachments

JR:jr

bc: Joseph Mikulka
Sharon Coe
Bureau File THRU J. Rogauskas and P. King
Central File/Confidential/NJPDES No.: NJ0003336

BB11

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
NORTHERN BUREAU OF REGIONAL ENFORCEMENT
1259 Route 46, Building 2
Parsippany, New Jersey 07054

(201) 299-7592
Fax # (201) 299-7719

MEMO

TO: Director Richard J. McManus, Office of Legal Affairs

FROM: Chief Joseph M. Mikulka, Northern Bureau of Regional Enforcement

SUBJECT: Hearing Request
United States Bronze Powders, Inc.
NJPDES Permit No.: NJ0003336
Raritan Township, Hunterdon County

Attached please find a DOL referral form and the required copies of an OAL referral package for the referenced facility. Please note that the letter granting the hearing request is missing from the package. The hearing was referred to the Division of Regulatory Affairs on May 23, 1990, but was lost in transit. This package represents a resubmission of that same case.

The Department recommends that this matter be consolidated with OAL Docket Number EWR 032266-91 and referred to Carol Jacobson, who is familiar with the issues and the settlement position of the Department.

The case manager is Sharon Coe, who may be contacted at (201) 299-7592.

J.M.M.

Attachments

JR:jr

bc: Joseph Mikulka
Sharon Coe
Bureau File THRU J. Rogauskas
Central File/Confidential/NJPDES No.: NJ0003336

BB12

Billing Code: _____

DOL ASSIGNMENT FORM FOR OAL REFERRALS

DIVISION OF WATER RESOURCES

DWR In-house #: NJ0003336

CASE NAME: United States Bronze Powders, Inc., Petitioner vs NJDEP, Respondent

DEP Docket No.: _____

Working Cost Center: DDE

County: Hunterdon

Case Priority ( ) - Reason _____

Program person with settlement authority: Joseph M. Mikulka, Bureau Chief

CASE TYPE

( ) WPS - Sewage Related

( ) Improper operation of POTW or other domestic treatment works
( ) Sewer ban related or sewer extension issue

_____
Name of municipality or operating authority County

(X) WNJ - Non-Sewage Related

(X) Surface Discharge ( ) Groundwater Discharge ( ) S.I.U. Permit
( ) RCRA Facility ( ) Landfill
( ) Sludge Treatment/ Disposal ( ) Illegal Discharge (no permit)

( ) UST - Underground Storage Tank ( ) Well Drilling
( ) WDR - Safe Drinking Water Act ( ) A280 Sampling/Analysis
( ) Improper Operation of Water Plant ( ) Small Water Co. Takeover Act

CASE INFORMATION

Permit Appeal: ( ) Conditions ( ) Denial ( ) Revocation
( ) Suspension ( ) Third Party

Total Amount of NOCAPA $ 194,500 Number of Separate Assessments 6

Summary of Order Requirements Discharge only in compliance with NJPDES permit

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PREVIOUS OR RELATED REFERRAL

OAL Docket #EWR 03266-91

CASE NAME: U.S. Bronze Powders, Inc., etitioner vs. NJDEP, Respondent DAG ASSIGNED: Carol Jacobson

CASE TYPE: AO & NCAPA - WNJ/Surface Discharge STATUS: (X) Open ( ) Closed

****

DOL USE ONLY:

( ) Special Group ( ) Environ. Pros.(L) ( ) High Priority(H) ( ) Monitor(M)

BB[illegible]

DL

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Eric J. Evenson
Acting Director

(609) 292-1637
Fax # (609) 984-7938

MAY 7 1990

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Niels L. Nielson
Vice President, Operations
United States Bronze Powders, Incorporated
P.O. Box 21, Route 202
Flemington, New Jersey 08822

Dear Mr. Nielson:

Re: Administrative Order and
Notice of Civil Administrative Penalty Assessment
United States Bronze Powders, Incorporated
NJPDES Permit No.: NJ0003336
Raritan Township, Hunterdon County

There is enclosed for service upon you an Administrative Order and Notice of Civil Administrative Penalty Assessment issued by the Department pursuant to the provisions of the Water Pollution Control Act, N.J.S.A. 58:10A-10b and d.

If you have any questions concerning this Administrative Order and Notice of Civil Administrative Penalty Assessment please contact Deborah Linton, Northern Bureau of Regional Enforcement, 1259 Route 46, Building 2, Parsippany, New Jersey, 07054, or by telephoning (201) 299-7592.

Very truly yours,

James K. Hamilton
Assistant Director
Enforcement Element

DL:mic

Enclosure

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State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Eric J. Evenson
Acting Director

(609) 292-1637
Fax # (609) 984-7938

IN THE MATTER OF	: ADMINISTRATIVE ORDER AND
UNITED STATES BRONZE	: NOTICE OF CIVIL ADMINISTRATIVE
POWDERS, INCORPORATED	: PENALTY ASSESSMENT

This Administrative Order and Notice of Civil Administrative Penalty Assessment is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter "NJDEP" or the "Department") by N.J.S.A. 13:1D-1 et seq., and the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and duly delegated to the Assistant Director or Bureau Chief of the Division of Water Resources, Enforcement Element pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. United States Bronze Powders, Incorporated (hereinafter "U.S. Bronze") operates a facility located at Block 40, Lot 4, Route 202 North, Raritan Township, Hunterdon County, New Jersey.

2. On December 20, 1982, the United States Environmental Protection Agency (hereinafter "USEPA") issued National Pollutant Discharge Elimination System (hereinafter ("NPDES") Permit No.: NJ0003336, effective February 1, 1983, to U.S. Bronze authorizing the discharge of pollutants from its treatment plant to surface waters known as the Mill Creek. Subsequently, NJDEP converted the NPDES Permit into New Jersey Pollutant Discharge Elimination System (hereinafter "NJPDES") Permit No.: NJ0003336 pursuant to N.J.A.C. 7:14A-10.2(a) with all terms and conditions of the NPDES Permit remaining intact. Although the expiration date of this Permit elapsed prior to issuance of a Permit renewal, pursuant to the "Administrative Procedure Act," N.J.S.A. 52:114B-11, the conditions of the expired Permit continued in force until the effective date of the Permit renewal. On September 30, 1988, the Department issued U.S. Bronze a renewal NJPDES Permit No.: NJ0003336. The Permit was effective November 1, 1988 and expires October 31, 1991.

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3. Pursuant to the Permit, U.S. Bronze discharges pollutants, as defined by N.J.A.C. 7:14A-1.9, into waters of the State.

4. No person shall discharge any pollutant except in conformity with a valid NJPDES Permit issued pursuant to the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

5. Part III-B/C of the Permit sets forth specific parameters to be reported on Discharge Monitoring Reports (hereinafter "DMRs") and identifies discharge limitations for each parameter for each permitted outfall.

6. U.S. Bronze has submitted DMRs to NJDEP as required by Part I, Paragraph 11.I of the Permit for the period of November 1, 1988 through January 31, 1990. The DMRs demonstrate that U.S. Bronze has violated the discharge limits of the Permit. Listed below are dates and parameters which were violated:

Reporting Period	Parameter	Permit Limits	Reported Values
11/88	Acute Toxicity	<10% mortality	18.2% mortality
2/89	Acute Toxicity	<10% mortality	50% mortality
9/89	Acute Toxicity	<10% mortality	100% mortality
11/89-1/90	TSS TDS	50 mg/l, max 1000 mg/l, max	250 mg/l 1900 mg/l
8/89-10/89	TDS	1000 mg/l, max	4100 mg/l
5/89-7/89	TDS	1000 mg/l max	1400 mg/l

The following abbreviations were used in the table above:

TSS - Total Suspended Solids
TDS - Total Dissolved Solids
max - maximum
mg/l - milligrams per liter

7. Based on the facts set forth in these FINDINGS, the Department has determined that U.S. Bronze has violated the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., specifically N.J.S.A. 58:10A-6, and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A-1 et seq., specifically N.J.A.C. 7:14A-1.2.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

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8. U.S. Bronze shall discharge pollutants only in conformity with NJPDES Permit No. NJ0003336, the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and the regulations promulgated pursuant thereto, N.J.A.C. 7:14A-1.1 et seq.

NOTICE OF CIVIL ADMINISTRATIVE PENALTY ASSESSMENT

9. Pursuant to N.J.S.A. 58:10A-10d and N.J.A.C. 7:14-8.1 et seq., and based upon the above FINDINGS, NJDEP has determined that a civil administrative penalty should be assessed against U.S. Bronze in the amount of $194,500. NJDEP's rationale for this Civil Administrative Penalty is set forth in Appendix A which is attached hereto and incorporated herein.

10. Payment of the penalty is due when a final Order is issued by the Commissioner subsequent to a hearing, if any, or when this Notice of Civil Administrative Penalty Assessment becomes a final Order (see following paragraph). Payment shall be made by certified or cashier's check payable to "Treasurer, State of New Jersey" and shall be submitted with the white copy of Form DEP - 062A (copy enclosed) to:

Bureau of Revenue
New Jersey Department of Environmental Protection
CN 402
Trenton, New Jersey 08625-0402

11. If no request for a hearing is received within twenty (20) calendar days after receipt of this Notice of Civil Administrative Penalty Assessment by U.S. Bronze it shall become a final Order upon the twenty-first (21) calendar day following its receipt by U.S. Bronze, and the penalty shall be due and payable.

12. Notice is further given that pursuant to N.J.S.A. 58:10A-10d and N.J.A.C. 7:14-8.12, the Department may, in addition to any civil administrative penalty assessed, amend such penalty for the economic benefit (in dollars) which a violator has realized as a result of not complying, or by delaying compliance, with this Act.

NOTICE OF RIGHT TO A HEARING

13. U.S. Bronze is entitled to an administrative hearing. Any hearing request shall be delivered to the address referenced in paragraph 16 below within twenty (20) calendar days from receipt of this Administrative Order and Notice of Civil Administrative Penalty Assessment.

14. U.S. Bronze shall, pursuant to N.J.A.C. 7:14-8.4(a) in its request for a hearing, furnish NJDEP with the following:

a. the name, address and telephone number of U.S. Bronze and its authorized representative;

b. U.S. Bronze defenses to each of the findings of fact stated in short and plain terms;

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c. an admission or denial of each of the findings of fact. If U.S. Bronze is without knowledge or information sufficient to form a belief as to the truth of a finding, U.S. Bronze shall so state and this shall have the effect of a denial. A denial shall fairly meet the substance of the findings denied. When U.S. Bronze intends in good faith to deny only a part or a qualification of a finding, U.S. Bronze shall specify so much of it as is true and material and deny only the remainder. U.S. Bronze may not generally deny all of the findings but shall make all denials as specific denials of designated findings. For each finding U.S. Bronze denies, U.S. Bronze shall allege the fact or facts as U.S. Bronze believes it or them to be;

d. information supporting the request and specific reference to/or copies of other written documents relied upon to support the request;

e. an estimate of the time required for the hearing (in days and/or hours); and,

f. a request, if necessary, for a barrier-free hearing location for physically disabled persons;

GENERAL PROVISIONS

15. This Administrative Order and Notice of Civil Administrative Penalty Assessment is binding on U.S. Bronze, its principals, directors, officers, agents, successors, assigns, any trustee in bankruptcy or other trustee, and any receiver appointed pursuant to a proceeding in law or equity.

16. U.S. Bronze shall submit all documents required by this Administrative Order and Notice of Civil Administrative Penalty Assessment by certified mail, return receipt requested or by hand delivery to:

Joseph M. Mikulka, Chief
Northern Bureau of Regional Enforcement
Division of Water Resources
1259 Route 46, Building 2
Parsippany, New Jersey 07054

Penalty payments shall be made in the manner indicated in paragraph 10 above.

17. Notice is given that this Administrative Order and Notice of Civil Administrative Penalty Assessment is issued only for the violations identified in the FINDINGS hereinabove and that violations of any statutes, rules or permits other than those herein cited may be cause for additional enforcement actions, either administrative or judicial, being instituted without further notice. By issuing this Administrative Order and Notice of Civil Administrative Penalty Assessment the Department does not waive its right to initiate additional enforcement actions.

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18. Obligations and penalties of this Administrative Order and Notice of Civil Administrative Penalty Assessment are imposed pursuant to the police powers of the State of New Jersey for the enforcement of law and the protection of the public health, safety and welfare and are not intended to constitute debt or debts which may be limited or discharged in a bankruptcy proceeding.

19. Notice is given that pursuant to N.J.S.A. 58:10A-10d, NJDEP is authorized to assess a civil administrative penalty of not more than $50,000 for each violation, and each day during which the violation continues shall constitute an additional, separate and distinct offense.

20. Notice is further given that pursuant to N.J.S.A. 58:10A-10e, any person who violates N.J.S.A. 58:10A-1 et seq., or an Administrative Order issued pursuant to N.J.S.A. 58:10A-10b, or who fails to pay the civil administrative penalty in full after it is due shall be subject to a civil penalty not to exceed $50,000 per day of such violation, and each day's continuance of the violation shall constitute an additional, separate and distinct violation.

21. Notice is further given that pursuant to N.J.S.A. 58:10A-10f, any person who willfully or negligently violates N.J.S.A. 58:10A-1 et seq. shall, upon conviction, be guilty of a crime of the fourth degree and shall be punished by fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than one year or by both. Punishment for a second offense under this subsection shall be a fine of not less than $10,000 nor more than $100,000 per day of violation, or by imprisonment for not more than two years, or both. Any person who knowingly makes a false statement, representation or certification in any application, record or other document filed or required to be maintained under this Act, or falsifies, tampers with or knowingly renders inaccurate, any monitoring device or method required to be maintained pursuant to this N.J.S.A. 58:10A-1 et seq. shall upon conviction, be subject to a fine of not more than $20,000 or by imprisonment for not more than six (6) months, or by both.

22. This Administrative Order shall be effective upon receipt.

BY THE AUTHORITY OF
ERIC J. EVENSON
ACTING DIRECTOR
DIVISION OF WATER RESOURCES
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

DATE: MAY 7 1990

BY: James K. Hamilton
Assistant Director
Enforcement Element

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APPENDIX A

Rationale for Penalty

United States Bronze Powders, Incorporated
P.O. Box 21, Route 202
Raritan Township, Hunterdon County

It was determined from a review of the Discharge Monitoring Reports (DMRs) provided by United States Bronze Powders, Incorporated (U.S. Bronze) for the reporting periods November 1, 1988 through January 31, 1990 that U.S. Bronze has violated its NJPDES Permit limitations.

Pursuant to N.J.A.C. 7:14-8.5, the Department shall assess a civil administrative penalty for violations on the basis of the seriousness of the violation and the conduct of the violator.

Effluent limitation violations are classified as indicated below:

a. Major : Hazardous Pollutant - >50% over limit
Non-hazardous Pollutant - >100% over limit

b. Moderate : Hazardous Pollutant - 26% to 50% over limit
Non-hazardous Pollutant - 51% to 100% over limit

c. Minor : Hazardous Pollutant - ≤25% over limit
Non-hazardous Pollutant - ≤50% over limit

Conduct Factor

a. Major : Intentional, deliberate, purposeful, knowing or willful acts.

b. Moderate : Unintentional but foreseeable acts.

c. Minor : Any other conduct not identified in (a) or (b) above.

NJDEP has classified the violations cited in paragraph six (6) as follows:

Conduct

Repeated violations of effluent limitations suggests that the permittee did not exercise diligence with respect to complying with its Permit conditions. An Administrative Order and Notice of Civil Administrative Penalty Assessment dated November 3, 1989 was served upon the permittee previously for effluent limitation violations from August 1987 through March 1989, with a penalty assessment of $255,000. Therefore, the violations are considered to be foreseeable, and the conduct is considered moderate.

Seriousness

Pursuant to N.J.A.C. 7:14-8.5(d), the seriousness factor of the violation shall be determined as major, moderate or minor based on the percentage amount that the reported effluent limit exceeded its Permit limitation.

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Pursuant to the matrix specified in N.J.A.C. 7:14-8.5, the penalty amounts are calculated as follows:

Moderate Conduct/Major Seriousness:

$35,000 per violation x ~~5~~ 4 violations = $175,000

Moderate Conduct/Moderate Seriousness:

$15,000 per violation x 1 violation = $15,000

Moderate Conduct/Minor Seriousness:

$4,500 per violation x 1 violation = $4,500

Total Penalty:	$175,000
	15,000
	+ 4,500
	$194,500

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SCHACHTER, COHN, TROMBADORE & OFFEN

A PROFESSIONAL CORPORATION

COUNSELLORS AT LAW

RICHARD J. SCHACHTER*
JOHN J. TROMBADORE*†
STEPHEN M. OFFEN*
THOMAS A. PAVICS†
MICHAEL J. STANTON
JOHN F. BRACAGLIA, JR.
ALLEN V. BROWN
WILLIAM D. ALDEN
MARY ANN PERLINSKY

OF COUNSEL
NED M. COHN

*CERTIFIED CIVIL TRIAL ATTORNEY
†CERTIFIED CRIMINAL TRIAL ATTORNEY

45 EAST HIGH STREET
P. O. BOX 520
SOMERVILLE, N. J. 08876-0520
201-722-5700

TELECOPIER: 201-722-8853

May 11, 1990

State of New Jersey
Department of Environmental Protection
Northern Bureau of Regional Enforcement
Division of Water Resources
Attention: Mr. Joseph M. Mikulka, Chief
1259 Route 46, Building 2
Parsippany, NJ 07054

Re: United States Bronze Powders, Incorporated
NJDES Permit No. NJ0003336-01
Our File No. J503

Dear Mr. Mikulka:

We shall appreciate your accepting this letter as a request for an administrative hearing in accordance with the Administrative Order and Notice of Civil Administrative Penalty Assessment recently served upon United States Bronze Powders, Incorporated ("U.S. Bronze").

In accordance with the terms of the order, please be advised as follows:

a. This office is the authorized representative of U.S. Bronze and our address and telephone number are as set forth above.

b. U.S. Bronze does not deny any of the findings set forth in Paragraphs 1 through 6.

c. It is the position of U.S. Bronze that the discharge limits imposed upon it are unreasonable, unfair and unrealistic and that the proposed penalty is excessive.

d. In approximately 1982, U.S. Bronze received its first discharge permit from the Environmental Protection Agency of the United States Government. This was renewed by the D.E.P. in September, 1988. Until the permit was issued, there were no limitations on discharges but since the issuance of the first permit, U.S. Bronze has attempted to reduce and control contents of the discharge.

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State of New Jersey
Department of Environmental Protection
Northern Bureau of Regional Enforcement
Division of Water Resources
Attention: Mr. Joseph M. Mikulka, Chief
Page 2
May 11, 1989

In 1988, U.S. Bronze hired Recon Systems, Inc. to assist it in the reduction of the discharge of metals and total dissolved solids and to reduce toxicity.

Remedial action including the following was undertaken:

i. Installation of more efficient filter media to minimize discharges into the air.

ii. Installation of a secondary filter system to prevent leaks into the air. This was installed in August, 1989 in one conveyor as a test. It seems to be successful and, therefore, this will be installed on all conveyors.

iii. Adoption of "best management practice" program involving improved training of personnel, increased surveillance and periodic inspections.

iv. Installation of a central vacuum system in the foundry.

v. Heavier lime spreading on lawn areas in an attempt to offset the results of acid rain.

As you know, U.S. Bronze uses water in its processing but the water is used only for non-contact cooling. This water, as it leaves the well prior to use, has been analyzed as containing 0.013 ppm of copper. The new permit effective in May, 1990 has been issued limiting discharge of copper to 0.014 ppm and to 0.097 ppm of zinc. Considering that the well water is just 0.001 ppm below the allowable discharge, the limitation pertaining to copper seems unrealistic. Over the thirty years that U.S. Bronze has operated on the site, copper powder has deposited on surfaces where it can be dissolved by acid rain and appear in solution. Considering, however, that for many years, there were no requirements and considering the content of copper in the ground water,

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the alleged violations and the proposed new limits (effective May, 1990) are unrealistic and unfair. Current discharges are probably related primarily to historical deposition of copper and acid rain, neither of which can be currently controlled by U.S. Bronze.

Since February, 1989, analyses of U.S. Bronze discharge to surface water have consistently been within the allowable limits. However, they are still above the limits proposed for May, 1990. The reduction since February, 1989 demonstrates the good faith attempts by U.S. Bronze to control and reduce discharged pollutants. Before February, 1989, copper content was inconsistent but attempts were being made and these bore fruit starting in February, 1989.

U.S. Bronze has also retained Applied Waste Water Technology to assist it in the reduction of pollutants including total dissolved solids and total suspended solids and to reduce acute toxicity. Applied Waste Water Technology is currently conducting its own tests and will be making its own recommendations for reducing pollutants.

It is unfair to impose limits that are unrealistic considering the history of the situation and to assess penalties for previous violations after U.S. Bronze has come into compliance.

It is understood that the samples which were analyzed can no longer be re-tested because they are either unavailable or because any subsequent analysis will be invalid. If this is the case, it is unfair of the D.E.P. to impose penalties in some cases two years after the fact knowing that any subsequent testing will be invalid and knowing of the margin of error in the types of analysis that were done.

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It is also the position of U.S. Bronze that the penalty, considering the history and the good faith efforts of U.S. Bronze to correct the situation and to come into compliance, is excessive and draconian.

3. It is impossible at this time to estimate the time required for a formal hearing but we request that a preliminary hearing be held. We estimate that the time for the preliminary hearing would be between thirty and sixty minutes.

Thank you for your consideration of this matter.

Very truly yours,

SCHACHTER, COHN, TROMBADORE & OFFEN
A Professional Corporation

By: _____
Richard J. Schachter

RJS:dmb
Via certified and regular mail
cc: State of New Jersey, Department of Environmental Protection, Division of Water Resources, CN 029, Trenton, NJ 08625-0029
United States Bronze Powders, Incorporated, Attention: Niels L. Nielson, Vice President/Operations
United States Bronze Powders, Incorporated, Attention: Bruce K. Klotz, Project Manager

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State of New Jersey
OFFICE OF ADMINISTRATIVE LAW

PREHEARING ORDER

OAL DKT. NO. ESW 3266-91

AGENCY DKT. NO. 90-185

Name of Agency: Department of Environmental Protection

UNITED STATES BRONZE POWDERS, INC.,
Petitioner,
v.
DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES,
Respondent.

Pursuant to *N.J.A.C.* 1:1-13.1 *et seq.*, a prehearing conference was held in the above-entitled matter on July 19, 1991, and the following procedures were established:

1. NATURE OF PROCEEDING AND ISSUES:

A. Nature of proceeding

The nature of the proceeding is an Administrative Order and Notice of Civil Administrative Penalty Assessment issued by the New Jersey Department of Environmental Protection, Division of Water Resources, alleging that petitioner violated *N.J.S.A.* 58:10A-6 and *N.J.A.C.* 7:14A-1.2, by emitting pollutants in excess of the limits of New Jersey Pollutant Discharge Elimination System (NJPDES) permit.

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B. Issues to be resolved

The issues in this proceeding are as follows:

(1) Whether petitioner violated *N.J.S.A* 58:10A-6 and *N.J.A.C.* 7:14A-1.2, by discharging pollutants while not in conformity with its NJPDES permit. Respondent contends that it was impossible to comply with the limits at that point in time.

(2) If a violation is found, whether the penalty is appropriate.

2. PARTIES AND THEIR DESIGNATED ATTORNEYS OR REPRESENTATIVES:

United States Bronze Powers, Inc. (petitioner)	Richard J. Schachter, Esq.
New Jersey Department of Environmental Protection, Division of Solid Water Resources (respondent)	Carol G. Jacobson, DAG

3. SPECIAL LEGAL REQUIREMENTS AS TO NOTICE OF HEARING:

None.

4. SCHEDULE OF HEARING DATES, TIME AND PLACE:

The hearings will be held on February 3, 4, and 5, 1992, beginning at 9:00 a.m. at the Office of Administrative Law in Newark, New Jersey.

5. STIPULATIONS:

No stipulations were possible at the time of the prehearing conference. However, the parties are encouraged to stipulate as many facts as possible prior to the hearing.

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6. SETTLEMENT:

Settlement was not possible at the time of the prehearing conference. However, the parties are encouraged to attempt to resolve the matter through a settlement.

7. AMENDMENTS TO PLEADINGS:

None.

8. DISCOVERY AND DATE FOR COMPLETION:

Discovery requests will be made by August 19, 1991, and responses will be provided by September 30, 1991. If any difficulties arise, the parties should proceed in accordance with *N.J.A.C.* 1:1-10.4(d).

9. ORDER OF PROOFS:

Respondent will proceed first with the presentation of its proofs.

10. EXHIBITS MARKED FOR IDENTIFICATION:

None.

11. EXHIBITS MARKED IN EVIDENCE:

None.

12. ESTIMATED NUMBER OF FACT AND EXPERT WITNESSES:

Respondent expects to call from two to four fact witnesses and one or two expert witnesses. Petitioner is uncertain at this time as to the number of witnesses that it will call. The parties will exchange a list of witnesses in discovery.

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13. MOTIONS CONTEMPLATED, PENDING OR GRANTED:

Respondent contemplates a motion for consolidation of this proceeding with another involving similar allegations against petitioner.

14. OTHER SPECIAL MATTERS:

None.

This matter may be reviewed by the Commissioner of the Department of Environmental Protection, either upon interlocutory review pursuant to *N.J.A.C.* 1:1-14.10 or at the end of the contested case pursuant to *N.J.A.C.* 1:1-18.6.

July 24, 1991
DATE

RICHARD McGILL, ALJ

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ATTACHMENT CC

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
ENFORCEMENT & REGULATORY SERVICES

COMPLIANCE EVALUATION INSPECTION
PUBLIC COMMUNITY WATER SUPPLY

DATE 1/23/89

GENERAL INFORMATION

SURVEYOR/ FACILITY: Flemington Water Department

FILE LOCATION: Borough of Flemington, Hunterdon County | PW-ID #: 1001001

MAILING ADDRESS: 38 Park Ave, Flemington, N.J. 08822

ADMIN.: John Gilman, Water Commissioner | REQUIRED LICENSES: T 1, W 2

BUSINESS TELEPHONE # Admin.: (201) 782-8840 Licensed Operators: T 4 Richard Stothoff, W 4

FACILITY DESCRIPTION: Barry Dan is T1 W1 Jim Yard

SOURCES: descriptions, locations, capacities(mgd): Well #4, Reaville Ave., .300 MGD
Well #5, Court Street, .265 MGD
Well #6, Memorial Park, .115 MGD
Well #7, Route 12, .350 MGD Est Tot Eff Cap: 1.130 MGD

TREATMENT: source, type, capacities(mgd): 50 gallon capacity Wallace & Tiernan Hypochlorinator at Wells: #4, #5, #6, #7
Est Tot Eff Cap: 1.130 MGD

FINISHED WATER STORAGE: descriptions, locations, capacities(mg): 1 Million Gallon Standpipe located off Shields Ave Gravity Feed
Est Tot Cap: 1.0 MGD

EMERGENCY INTERCONNECTIONS: descriptions, available gallonage(mgd): Elizabethtown Water Co, 4" main & Maple Glen Supply, 6" main Interconnections in place but inoperable at present
Est Tot Avail:

AUXILIARY POWER: location, type, capabilities: Portable generator at road dept. garage

CC1

NJDEP - DIVISION OF WATER RESOURCES
PUBLIC COMMUNITY WATER SUPPLY INSPECTION

DELIVERY INFORMATION

PLANT DELIVERED WATER (mgd,month,year) Max .71 MGD 7/83 Min .42 MGD 12/88 Annual Average .653 MGD 1988

BULK PURCHASES (provider,mgd) None

BULK SALES (customer, mgd) None

NUMBER OF SERVICES 1229 % METERED 100%

MUNICIPALITIES SERVED (est. services in each) Lemoyne Borough, Raritan Twp

TOTAL ESTIMATED POPULATION SERVICED 4237

CURRENT/RECENT WATER RESTRICTIONS None

NEW CONSTRUCTION (Project Numbers) None

DISTRIBUTION MAINS: Sizing 4" (min) to 12" (max)
Pressures 41 psi (min) to 60 psi (max)
Hydrants/Flushing Program 120 / 2 x per year

MONITORING & REPORTING

PARAMETER(S)	FREQUENCY REQUIRED	FREQUENCY PERFORMED
Coliform	5/month	Done 5/month
Inorganics	1/3 yrs	Done 5/88
Nitrate	1/3 yrs	Done 5/88
Trihalomethanes	—	—
Organics	—	—
Turbidity	—	—
Bacteriological	1/4 yrs.	Completed 6/86
Secondary	1/3 yrs.	Done 6/87
A280	2/yr.	Done 1988
Sodium	1/3 yrs.	Done 5/88

NAME OF LABORATORY Quality Control Lab CERTIFICATION # 77166

ADDRESS P.O. Box 514, Southampton, PA 18966

COMPLIANCE EVALUATION

SOURCE DEFICIENCIES Blow-off pipes need to be screened (NJAC 7:10-11.4(

TREATMENT DEFICIENCIES None

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER
NON TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEMS
INSPECTION REPORT

S ID 1021375 LAST INSPECTION DATE 09/26/88
UPDATE 4/22/80

ACILITY LOCATION

NICIPALITY RARITAN TWP COUNTY HUNTERDON

CT/BLOCK 14/15

OCCUPANT NAME HUNTERDON MED CENTER WELL #4 TELE (___) _____

CUPANT ADDRESS ROUTE 31

ITY RARITAN TWP STATE NJ ZIP CODE 08822

CILITY OWNER NAME _____ TELE (201) 7886119

NER ADDRESS ROUTE 31

ITY FLEMINGTON STATE NJ ZIP CODE 08822

URCE DESCRIPTION (DEPTH/DIAMETER/LOCATION) _____

EATMENT UNTREATED

(APPROVAL BY ADMINISTRATIVE AUTHORITY REQUIRED)

VERAGE POPULATION 600 NUMBER OF BUILDINGS 1 SUB UNITS _____

RTY RESPONSIBLE FOR SAMPLING Anthony Stuta TELE (___) _____

SAMPLE TYPE	DATE OF LAST SAMPLE	UPDATE	STATE CERTIFIED LAB
COLIFORM BACTERIA (1 SAMPLE/CALENDAR QUARTER)	01/17/90	__/__/__	Townley Research
ITRATE (1 SAMPLE EVERY 3 YEARS)	04/19/89	__/__/__	Townley Research

S SAMPLING FREQUENCY SATISFACTORY? YES (X) NO ( )

EFICIENCIES ( ) SEE OTHER SIDE (X) NONE

ERSON INTERVIEWED/POSITION _____ TELE (___) _____

NSPECTED BY/POSITION _____ TELE (___) _____

Change to Non-Transient

CC3 E

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER
NON-TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEMS
INSPECTION REPORT

'S ID 1021374

LAST INSPECTION DATE 09/26/88
UPDATE 4/12/90

ACILITY LOCATION

UNICIPALITY RARITAN TWP

COUNTY HUNTERDON

IT/BLOCK 14/15

CCUPANT NAME HUNTERDON MED CENTER WELL 3

TELE (___) _____

CUPANT ADDRESS ROUTE 31

CITY RARITAN TWP

STATE NJ

ZIP CODE 08822

ACILITY OWNER NAME _____

TELE (201) 7886119

WNER ADDRESS ROUTE 31

CITY FLEMINGTON

STATE NJ

ZIP CODE 08822

OURCE DESCRIPTION (DEPTH/DIAMETER/LOCATION) _____

_____

EATMENT UNTREATED

(APPROVAL BY ADMINISTRATIVE AUTHORITY REQUIRED)

AVERAGE POPULATION 600 NUMBER OF BUILDINGS 1 SUB UNITS _____

ARTY RESPONSIBLE FOR SAMPLING Anthony Stella TELE (___) _____

AMPLE TYPE	DATE OF LAST SAMPLE	UPDATE	STATE CERTIFIED LAB
COLIFORM BACTERIA (1 SAMPLE/CALENDAR QUARTER)	01/17/90	__/__/__	Townley Research
NITRATE (1 SAMPLE EVERY 3 YEARS)	04/19/89	__/__/__	Townley Research

S SAMPLING FREQUENCY SATISFACTORY? YES (X) NO ( )

EFICIENCIES ( ) SEE OTHER SIDE (X) NONE

PERSON INTERVIEWED/POSITION _____ TELE (___) _____

NSPECTED BY/POSITION _____ TELE (___) _____

Change to Non-Transient

CC4

NEW JERSEY DEPARTMENT OF ENVIRSONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER
NON-TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEMS
INSPECTION REPORT

ID 1021305 LAST INSPECTION DATE 09/26/88
UPDATE 4/12/90

CILITY LOCATION

ICIPALITY RARITAN TWP COUNTY HUNTERDON

T/BLOCK 15/14

UPANT NAME HUNTERDON MEDICAL CTR (WELL 1) TELE (___) _____

CUPANT ADDRESS RTE 31

Y RARITAN TWP STATE NJ ZIP CODE 08822

ILITY OWNER NAME _____ TELE (201) 7886119

NER ADDRESS RTE 31

Y FLEMINGTON STATE NJ ZIP CODE 08822

URCE DESCRIPTION (DEPTH/DIAMETER/LOCATION) 355 FEET

EATMENT _____

APPROVAL BY ADMINISTRATIVE AUTHORITY REQUIRED

ERAGE POPULATION 600 NUMBER OF BUILDINGS 4 SUB UNITS _____

ARTY RESPONSIBLE FOR SAMPLING Anthony Stern TELE (___) _____

AMPLE TYPE	DATE OF LAST SAMPLE	UPDATE	STATE CERTIFIED LAB
LIFORM BACTERIA 1 SAMPLE/CALENDAR QUARTER)	10/18/89	__/__/__	Townley Research
TRATE 1 SAMPLE EVERY 3 YEARS)	04/19/89	__/__/__	Townley Research
GANIC COTAMINANTS SAMPLE EVERY 5 YEARS)	_____	__/__/__	_____

SAMPLING FREQUENCY SATISFACTORY? YES ( ) NO ( )

EFICIENCIES ( ) SEE OTHER SIDE ( ) NONE

RSON INTERVIEWED/POSITION _____ TELE (___) _____

NSPECTED BY/POSITION _____ TELE (___) _____

CC5E

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER
Non TRANSIENT NON-COMMUNITY PUBLIC WATER SYSTEMS
INSPECTION REPORT

S ID 1021376

LAST INSPECTION DATE 08/25/87
UPDATE 4/12/90

ACILITY LOCATION

UNICIPALITY CLINTON TWP

COUNTY HUNTERDON

T/BLOCK

CCUPANT NAME HUNTERDON MED CENTER/RIVERFELD

TELE (201) 788-6119

CUPANT ADDRESS ROUTE 31

ITY ~~CLINTON TWP~~ Flemington STATE NJ ZIP CODE 08822

TELE (201) 7886119

..CILITY OWNER NAME

NER ADDRESS ROUTE 31

ITY FLEMINGTON STATE NJ ZIP CODE 08822

URCE DESCRIPTION (DEPTH/DIAMETER/LOCATION)

EATMENT

(APPROVAL BY ADMINISTRATIVE AUTHORITY REQUIRED)

AVERAGE POPULATION 100 NUMBER OF BUILDINGS 1 SUB UNITS

RTY RESPONSIBLE FOR SAMPLING Anthony Stasia TELE (__)

SAMPLE TYPE	DATE OF LAST SAMPLE	UPDATE	STATE CERTIFIED LAB
COLIFORM BACTERIA (1 SAMPLE/CALENDAR QUARTER)	01/17/90	__/__/__	Townley Research " "
NITRATE (1 SAMPLE EVERY 3 YEARS)	04/18/89	__/__/__	

S SAMPLING FREQUENCY SATISFACTORY? YES (X) NO ( )

EFICIENCIES ( ) SEE OTHER SIDE (X) NONE

PERSON INTERVIEWED/POSITION Phone TELE (201) 788-6119

NSPECTED BY/POSITION R. Brost TELE (201) 788-13

Change to Non-Transient

CC 6

ATTACHMENT DD

TO: U.S. BRONZE POWDERS FILE

FROM: DONNA J. VAN VELDHUISEN, HSMS II
BUREAU OF SITE ASSESSMENT

SUBJECT: PSA ON SEPTEMBER 20, 1991 AT U.S. BRONZE POWDERS

On September 20, 1991 Donna van Veldhuisen and Mike Digiore of the Bureau of Site Assessment (BSA) conducted a Pre-Sampling Assessment (PSA) at the U.S. Bronze Powders facility in Raritan Township. BSA personnel met with Ray Moralis and Bruce Klotz of U.S. Bronze at 0950 hours. The following information was obtained during the PSA:

-The site is 22 acres; however, only the manufacturing area is fenced.

-They have a foundry building with a furnace which melts the copper and copper alloys. The resulting product is then grinded into powder. Twenty-three ball mills on site flatten the grains into flakes.

-Wastes generated include vacuum dust which is removed from site and reused by another company. Laboratory wastes are placed in 55-gallon drums and removed from site by Safety-Kleen approximately one drum in 90 days. These wastes are F003 and F005 wastes. Ink producing process waste is stored in 55-gallon drums prior to removal from the site. Three 275-gallon aboveground storage tanks contain waste oil generated on site. The tanks are within a contained area and the oil is removed by Safety-Kleen within 90 days.

-The four mineral spirit tanks were removed in 1986. The size of the tanks were 8,000 gallons, 4,000 gallons, 8,000 gallons and 1,000 gallons.

-The company still uses their production wells; there is no municipal water hookup.

-The monitoring wells are sampled once per year even though they are not required to sample them. The wells were last sampled approximately two months ago. The proposal for the submersible pump in MW-3 was submitted to the NJDEP; however, they have not yet received approval.

-One 12,000-gallon fuel oil tank is present on site. The tank is located near the gate to the facility and is monitored.

DD

-A 500-gallon gasoline tank was excavated in 1986 or 1987.

-A 550-gallon fuel oil tank is located near the well pumphouse.

-Runoff from the site and currently the roof drains appears to flow downhill to an unnamed creek located on the east side and adjacent to the site. Pathways down the hill are evident and some areas are unvegetated.

-Copper-colored water was present outside the east side of the building. This area has been sampled and remedial activities have been proposed.

-Currently the company is developing a stormwater treatment system for the roof drains. The discharge will be to Mill Creek.

-Numerous readings above background were observed on the OVA and HNu in the former mineral spirits tank area and the former gasoline tank area.

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